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FINAL REPORT

Study Title:

Subchronic Toxicity Study in Rats
with p-Xylene

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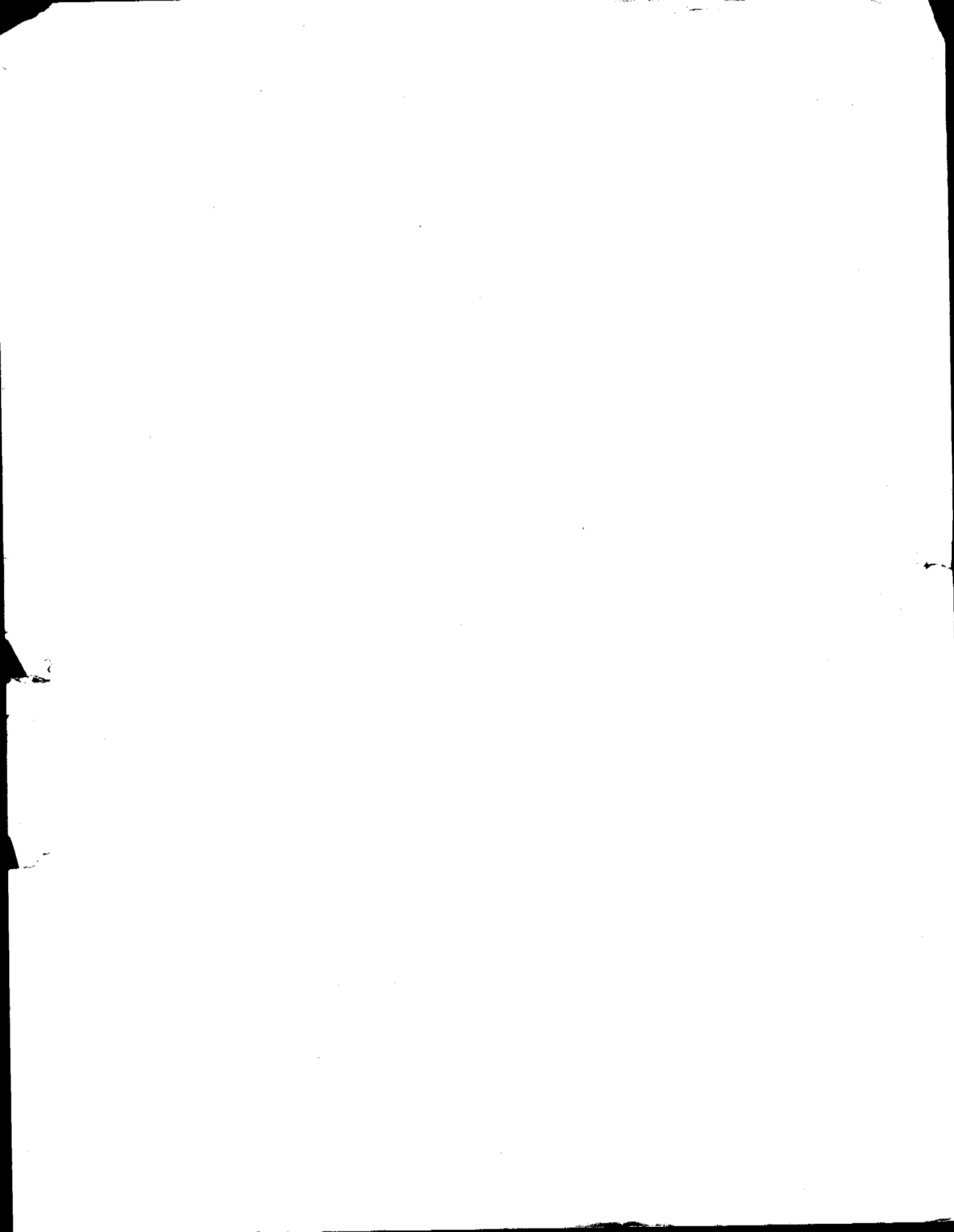
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HLA Study No. 2399-110

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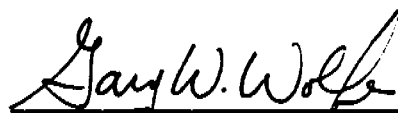
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COMPLIANCE STATEMENT

Subchronic Toxicity Study in Rats with p-Xylene

This study was conducted in compliance with the Good Laboratory Practice Regulations as set forth in Title 40 of the U.S. Code of Federal Regulations Part 160. There are no significant deviations from the aforementioned regulations which affected the quality or integrity of the study or the interpretation of the results in the report.

Study Director:



Gary W. Wolfe, Ph.D., D.A.B.T.
Life Sciences Division

6/3/88

Date

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QUALITY ASSURANCE UNIT

Project Title: Subchronic Toxicity Study in Rats with p-Xylene

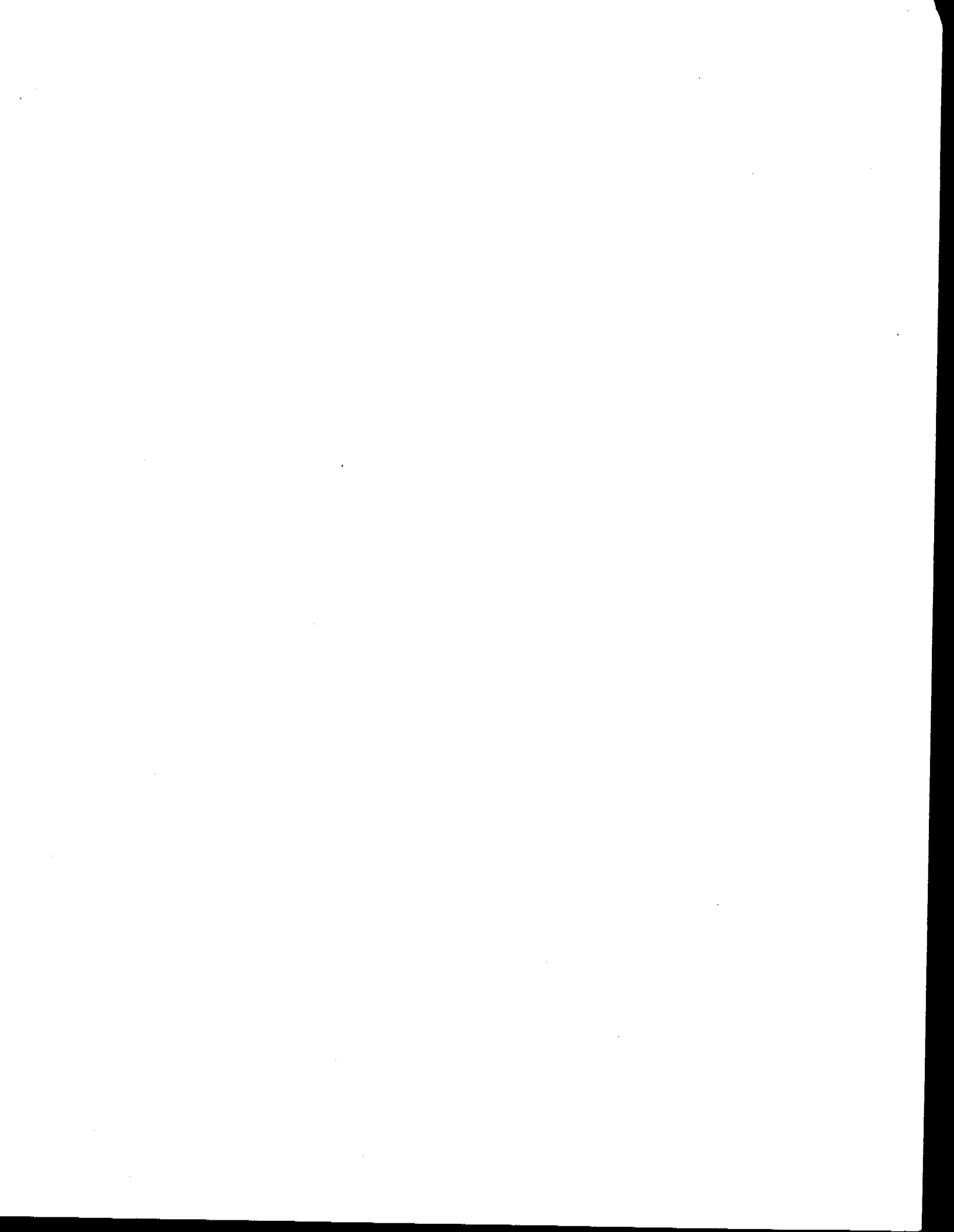
Project No.: 2399-110

Quality Assurance inspections of the study and review of the final report of the above referenced project were conducted according to the standard operating procedures of the Quality Assurance Unit and according to the general requirements of the Good Laboratory Practice Regulations issued by the Environmental Protection Agency for compliance on or after May 2, 1984. Findings from the inspections and the final report review were reported to management and to the study director on the following dates:

<u>Inspections/Review</u>	<u>Findings Reported</u>	<u>Inspector/Reviewer</u>
Protocol 4/10/86	4/10/86	D. Goldsteen
Inspection 1 4/22,23; 5/5/86	5/12/86	D. Goldsteen
Inspection 2 7/2,9,10,21/86	7/23/86	D. Goldsteen
Final Report 9/5,8-11,16,17/86	9/19/86	K. Glenn
Final Report 12/31/86; 1/5/87	1/9/87	K. Reilly
Final Report 5/31; 6/1/88	6/1/88	E. Jenkins

Elin Jenkins
Final Report Reviewer
Quality Assurance Unit

6/7/88
Date Released





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STUDY IDENTIFICATION
Subchronic Toxicity Study in Rats with p-Xylene

HLA Study Number	2399-110
Test Material	p-Xylene (CAS 106-42-3)
Sponsor/Study Monitor	Sharon Segal, Ph.D. Dynamac Corporation 11140 Rockville Pike Rockville, Maryland 20852 (301) 468-2500
Study Director	Gary W. Wolfe, Ph.D., D.A.B.T. Hazleton Laboratories America, Inc. 1330-B Piccard Drive Rockville, Maryland 20850-4373 (301) 670-9600
Study Timetable	
Initiation Date	April 17, 1986
Termination Date	July 23, 1986

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STUDY PERSONNEL
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SUMMARY

The test material, p-Xylene (CAS 106-42-3), was administered to male and female Sprague-Dawley rats by oral gavage in order to evaluate its subchronic toxicity. Dose levels were 0, 100, 200, and 800 mg/kg/day (Groups 1 through 4, respectively), with 20 animals/sex/group dosed daily for at least 90 days. Criteria evaluated included mortality, clinical signs, body weights, food consumption, ophthalmologic examinations, hematology, clinical chemistry, organ weights, organ-to-body weight ratios, gross pathology, and histopathology.

At least one animal in each treated group died before termination of the study and there was a significant increase in mortality in Group 4 males. However, based on histopathology findings, nearly all of the unscheduled deaths were related to aspiration of the vehicle/test material. Salivation was frequently observed and exclusively in both sexes of Group 4. Mean body weights were slightly decreased in Group 4 males and females while total food consumption was slightly increased in these groups. There was one incidental finding in the hematology results. In the clinical chemistries, a few significant differences were present in the Group 4 females at Week 5; however, none were present at Week 13. No apparent compound-related effects were present in the ophthalmology, organ weight, gross pathology, or histopathology data.

Based on the results of this study, with the consideration of vehicle/test material aspiration producing the deaths in the treated groups, the no-observed-effect level (NOEL) of p-Xylene was 200 mg/kg/day.

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INTRODUCTION

The purpose of this study was to evaluate the subchronic toxicity of p-Xylene when administered to rats daily by oral gavage for 90 days. The study was conducted according to applicable EPA guidelines and the Good Laboratory Practice regulations.

A copy of the study protocol and all amendments are contained in Appendix 9. The study was initiated on April 17, 1986, and was terminated on July 23, 1986. The study was performed at the Rockville, Maryland, facility of Hazleton Laboratories America, Inc. (HLA).

TEST MATERIAL

The test material, p-Xylene (CAS 106-42-3), Lot No. 235 855 was a clear, colorless liquid. It was received from Fluka Chemical Corporation, Hauppauge, New York, in three shipments (March 6, April 17, and April 30, 1986) and was stored frozen and protected from light. Dosing formulations were prepared using corn oil as the vehicle and were adjusted to 100% activity, based on a purity of 99%. The formulated test material was stored at room temperature.

Analyses for purity, stability, and dose concentration were performed on the test material.

TEST ANIMALS

Sprague-Dawley rats were used in this study because they have historically been used in safety evaluation studies and were requested by the EPA. A total of 105 males and 105 females was received from Charles River Breeding Laboratories, Inc., Raleigh, North Carolina, on April 1, 1986. They were

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acclimated to laboratory conditions for approximately two weeks, making them 45 days of age at the time of study initiation. The body weights at initiation ranged from 199.1 to 257.8 g for the males and 144.9 to 192.1 g for the females.

The rats were uniquely identified by ear tags and cage cards and were housed individually in elevated wire-mesh cages. Commercial rodent diet (Purina Certified Rodent Chow® #5002) and acidified tap water were available ad libitum. The temperature and relative humidity in the animal room were recorded twice daily (with few exceptions) and ranged from 71 to 78°F and 31 to 69%, respectively. A 12-hour light/dark cycle was maintained daily via artificial illumination.

METHODS

Groups and Dose Levels

Following physical and ophthalmologic examinations, 85 clinically acceptable rats of each sex were assigned to treatment groups (shown below) using a computer weight randomization program. Animals not selected were assigned to another study or discarded without necropsy. Baseline groups were used for pretreatment bloodwork and later discarded without necropsy.

Group	<u>No. of Animals</u>		<u>Animal Numbers</u>		Dose Level (mg/kg/day)
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>	
1 (Control)	20	20	8602-8621	8622-8641	0
2	20	20	8642-8661	8662-8681	100
3	20	20	8682-8701	8702-8721	200
4	20	20	8722-8741	8742-8761	800
5 (Baseline)	5	5	8762-8766	8767-8771	0



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Compound Preparation and Administration

Dosing solutions were prepared weekly according to the following procedure. For each dose level, the calculated amount of test material was weighed and transferred to a volumetric flask. Corn oil was added to achieve the final volume, then the flask was capped and inverted by hand until thoroughly mixed.

The formulated test material was administered to the animals by oral gavage daily for 13 weeks; control animals received the vehicle only. The dosing factor was 2.5 mL/kg.

Analytical Chemistry

The test material was analyzed for identity and purity prior to initiation of the study and again at termination for purity only. Formulated test material was analyzed for stability and dose concentration. The schedule and results of these analyses are included in the Analytical Chemistry Report (Appendix 9).

Observations and Records

All rats were observed for overt signs of toxicity daily, beginning about one hour after completion of dosing. In addition, a cursory exam was conducted during dosing. Complete physical examinations were performed at initiation and weekly thereafter. Mortality/moribundity checks were performed twice daily. Individual body weights were recorded during the randomization procedure, at initiation, and weekly thereafter. Food consumption was recorded weekly.

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Ophthalmoscopic Examinations

Ophthalmoscopic examinations were performed by a board-certified veterinary ophthalmologist on all animals to be used on study prior to treatment and on the last ten survivors per sex per group during Week 13. Pupils of both eyes were dilated prior to examination using 1% Atropine Sulfate.

Clinical Pathology

Clinical pathology determinations (shown below) were made on five animals per sex (Baseline group) prior to initiation and on the first ten survivors per sex per group during Weeks 5^a and 13. Following an overnight fast, samples were collected via the orbital sinus while under carbon dioxide anesthesia.

Hematology:

leukocyte count
erythrocyte count
hemoglobin
hematocrit

platelet count
differential leukocyte count
reticulocyte count
cell morphology

Serum Chemistry:

sodium
potassium
chloride
total protein
albumin
calcium
phosphorus
total bilirubin
urea nitrogen

creatinine
glucose
SGOT/AST
SGPT/ALT
globulin
alkaline phosphatase
cholesterol
albumin/globulin ratio
lactate dehydrogenase

^aProtocol-required bloodwork for Week 4 was actually performed during Week 5.



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Tissue Preservation

The following tissues from each animal (when present) were preserved in 10% neutral buffered formalin:

all gross lesions	kidneys
brain with brainstem	adrenals
(medulla/pons, cerebellar cortex, and cerebral cortex)	pancreas
pituitary	testes
thyroid with parathyroids	ovaries
thymus	uterus
lungs	spleen
trachea	aorta
heart	esophagus
salivary glands (mandibular)	stomach (forestomach and glandular)
liver	duodenum, jejunum, ileum
sternum with bone marrow	colon, cecum, rectum
mammary gland	urinary bladder
thigh musculature	mesenteric lymph node
eyes	sciatic nerve
skin	femur including articular surface
epididymides	cervical spinal cord
prostate	mid-thoracic spinal cord
seminal vesicles	lumbar spinal cord
	exorbital lacrimal glands

Histopathology

All preserved tissues from all animals were embedded in paraffin, sectioned, and stained with hematoxylin and eosin.

The following tissues were examined microscopically:

- (1) All tissues from control and high-dose animals and from all animals not surviving to termination.
- (2) Gross lesions, lungs, liver, and kidneys from all remaining animals.



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Sacrifice and Gross Pathology

All animals that died during the course of the study and all survivors sacrificed after 13 weeks of treatment were given a complete gross necropsy. The method of euthanasia was exsanguination while under sodium pentobarbital anesthesia. The necropsy included examination of the following:

- the external surface
- all orifices
- cranial cavity
- carcass
- external surface of the brain
- the thoracic, abdominal, and pelvic cavities and their viscera
- the tissues and organs of the neck region

At the terminal sacrifice, five animals per sex from the control group and 10 animals per sex from each treated group were selected for electron microscopy. A separate report, including methods and results, is to be submitted to the Sponsor by the performing laboratory.

Organ Weights

The following organs were weighed for each terminally-sacrificed animal.

liver	brain with stem
kidney	heart
spleen	testes with epididymides
adrenal glands	ovaries

Organ-to-body weight ratios were calculated using each animal's terminal body weight.

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Statistical Analysis

Cumulative survival data were analyzed using the National Cancer Institute Package (Life Table Analysis). Trend analysis of survival was evaluated at the 5.0% one-tailed probability level.

Body weight, food consumption, appropriate clinical pathology data, and organ weight data from the control group were compared to those of the treated groups of the same sex. Statistical analyses were performed as diagrammed in Figure 1. Tests for homogeneity of variances and ANOVA were evaluated at the 5.0% one-tailed probability level. Control vs. treated group means were evaluated using Dunnett's t-test at the 5.0% two-tailed probability level.

Data transformations were performed when variances were heterogeneous (see Figure 1) and are indicated in the tables by the appropriate superscript next to the control group mean:

- A = Data analyzed following \log_{10} transformation
- B = Data analyzed following square (x^2) transformation
- C = Data analyzed following square root ($x^{1/2}$) transformation
- D = Data analyzed following reciprocal ($1/x$) transformation
- E = Data analyzed following angular (arcsine $x^{1/2}$) transformation
- F = Data analyzed following rank transformation

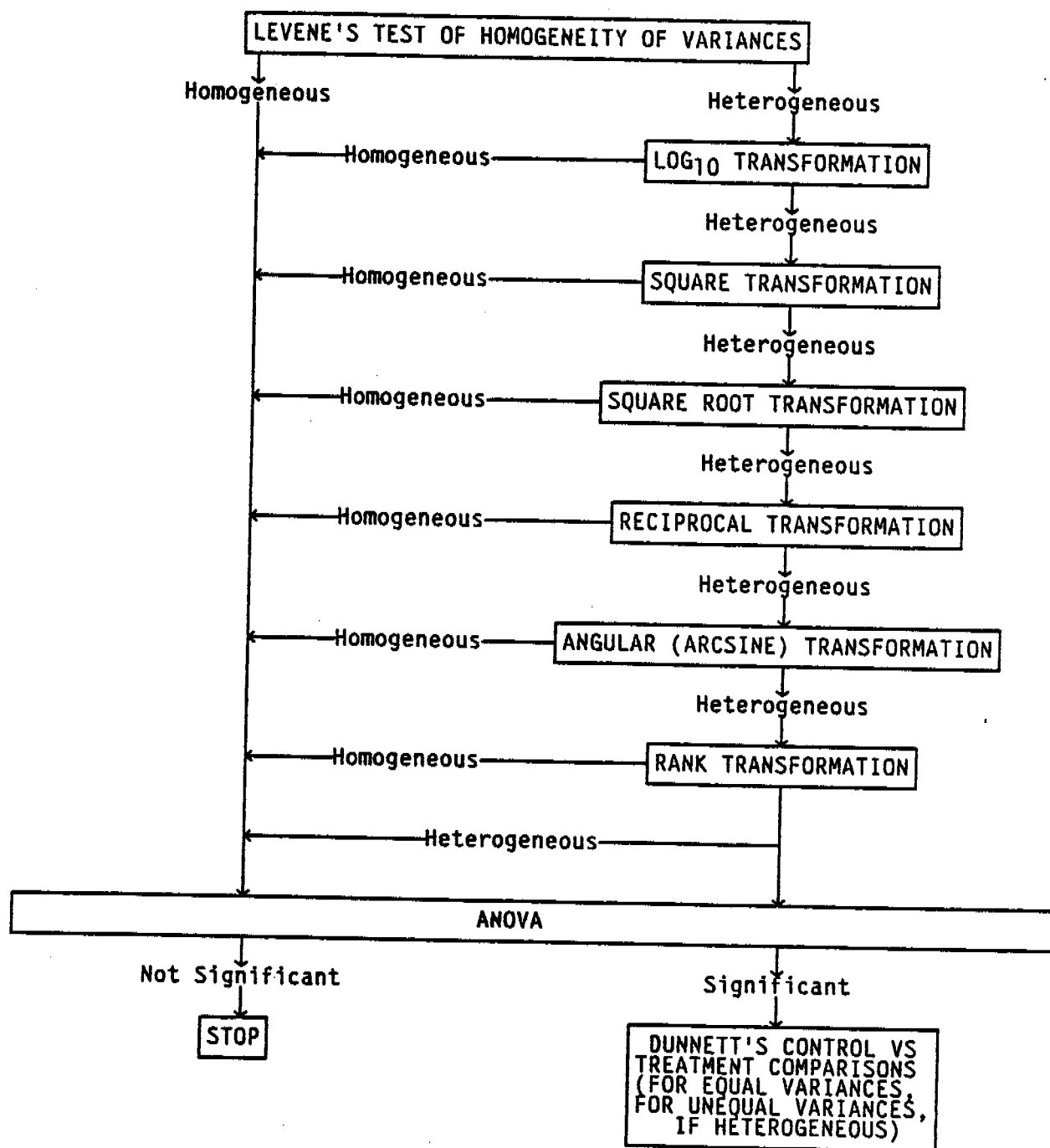
Throughout this report, when an effect is referred to as "significant", it means there is a statistically significant difference between the control group and the specified treated group of the same sex. Statistical significance is indicated in the tables by an "s" superscript next to the treated group mean.

Raw Data and Final Report Storage

All raw data and the final report are stored in the archives of Hazleton Laboratories America, Inc.

FIGURE 1

FLOWCHART OF ANOVA AND RELATED METHODS



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RESULTS

Mortality

Group survival data, by week of study, are presented in Table 1. Individual animal disposition is presented in Appendix 1.

In the Group 4 males, there was significantly higher mortality. There was also a significant trend for increased mortality in the males. There were no significant differences in mortality in the female groups and no significant trend was present.

Clinical Signs

A summary incidence of weekly clinical signs is presented in Table 2; individual data are presented in Appendix 2. A summary incidence of daily observations is presented in Table 3 (signs with only a single occurrence are not included).

The most commonly observed weekly clinical signs were malocclusion, chromodacryorrhea, sores, and salivation. Of these, only salivation showed a compound effect: it was seen only in both sexes of Group 4. Sores were seen mostly on the ears and were probably due to the method of identification (ear tag).

Daily observations included sensitivity to touch and salivation. the former had such a low incidence (observed twice during the study) that it was not considered important. Salivation, however, was observed frequently during every study week except the first, and it occurred only in Group 4 (both sexes). Generally, it was observed just prior to dosing and the animals were back to normal by the one-hour post-dosing observations.



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Body Weights and Food Consumption

Mean body weights are presented in Tables 4A (Mean Body Weights), 4B (Body Weight Change) and graphically in Figure 2; individual values are presented in Appendix 3. Food consumption data are presented in Tables 5A (Weekly Mean Values), 5B (Total Food Consumption at Selected Intervals) and graphically in Figure 3; individual values are presented in Appendix 4.

The mean body weights of both sexes of Group 4 were lower than the other groups. There was no significant difference in total body weight gain between the control and treated groups of either sex, nor was there a significant difference in mean body weights at Week 13.

While body weights were slightly lower in Group 4 males and females, food consumption was generally highest in Group 4 of both sexes. Total food consumption was significantly increased in the Group 4 females for Weeks 10-13.

Ophthalmoscopic Examinations

Individual ophthalmoscopic findings and copies of the ophthalmologist's reports are presented in Appendix 5.

No ocular abnormalities were seen in any of the animals at the terminal examination.

Clinical Pathology

Mean hematology values are presented in Table 6; individual values are presented in Appendix 6. Mean clinical chemistry values are presented in Table 7; individual values are presented in Appendix 7.

There was no significant differences in any hematology parameters in the treated groups of either sex at Week 5. The only significant difference at Week 13 was in segmented neutrophils, which were decreased in the Group 3 males.

FIGURE 2 - MEAN BODY WEIGHTS

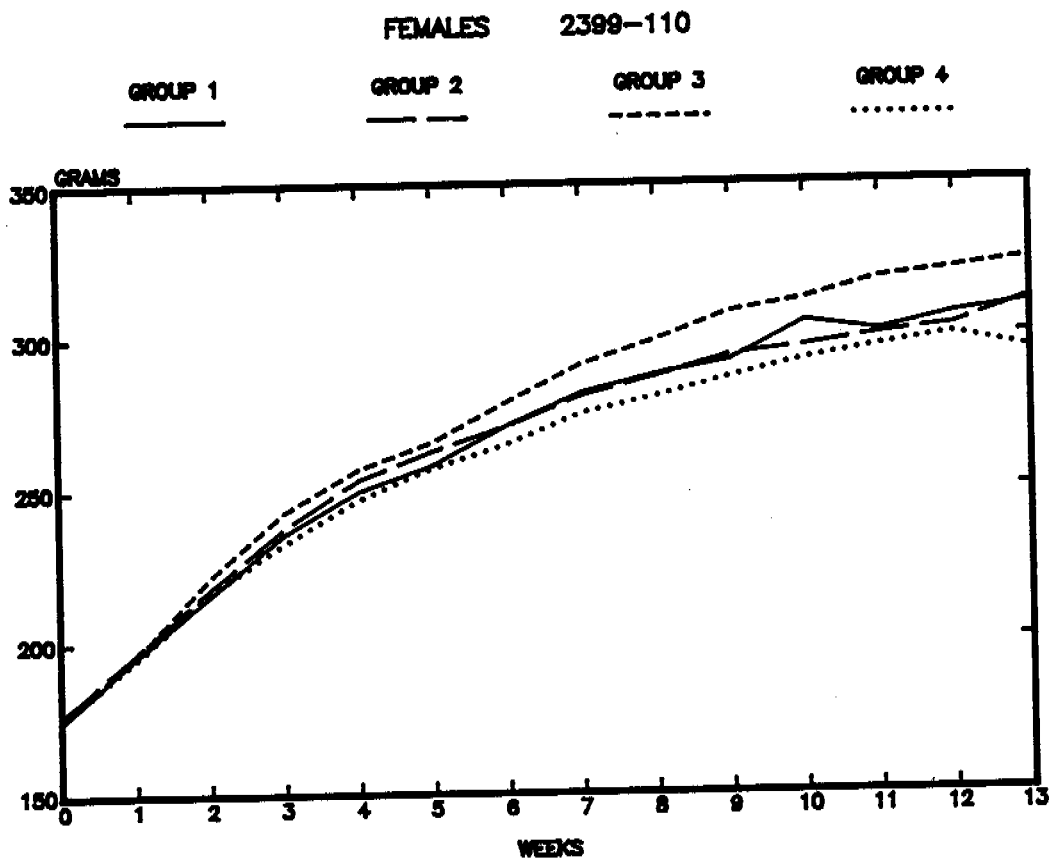
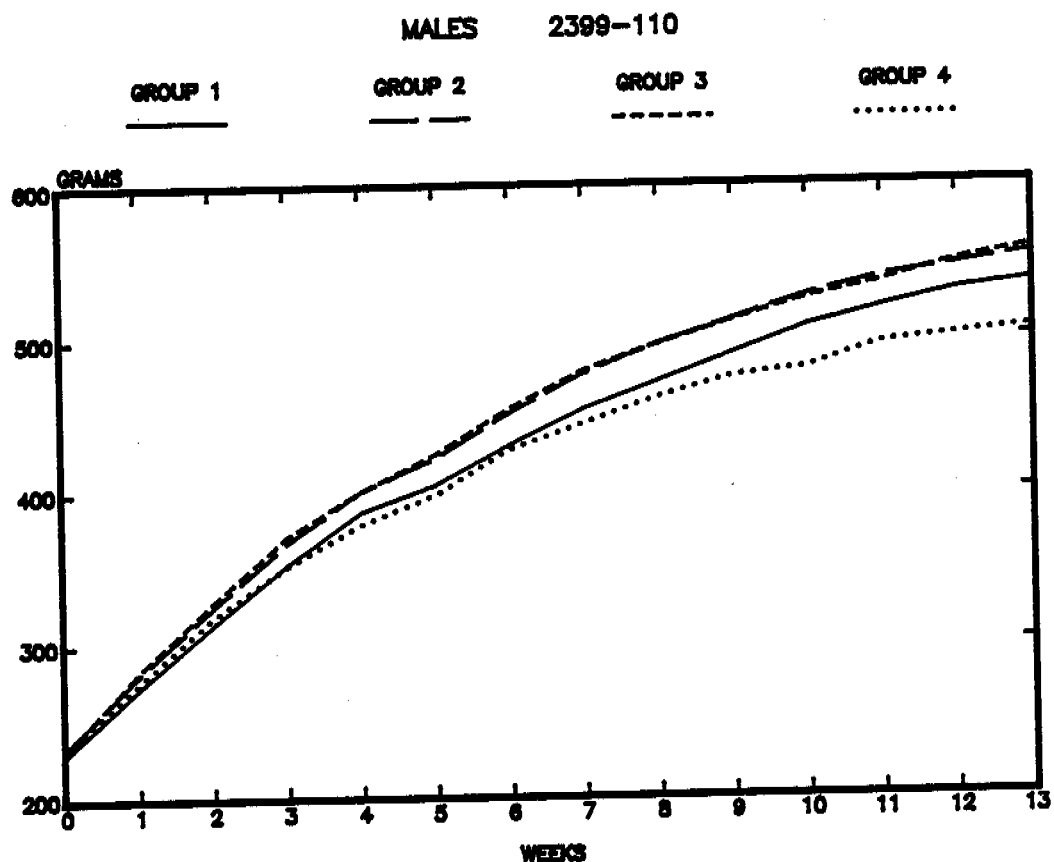
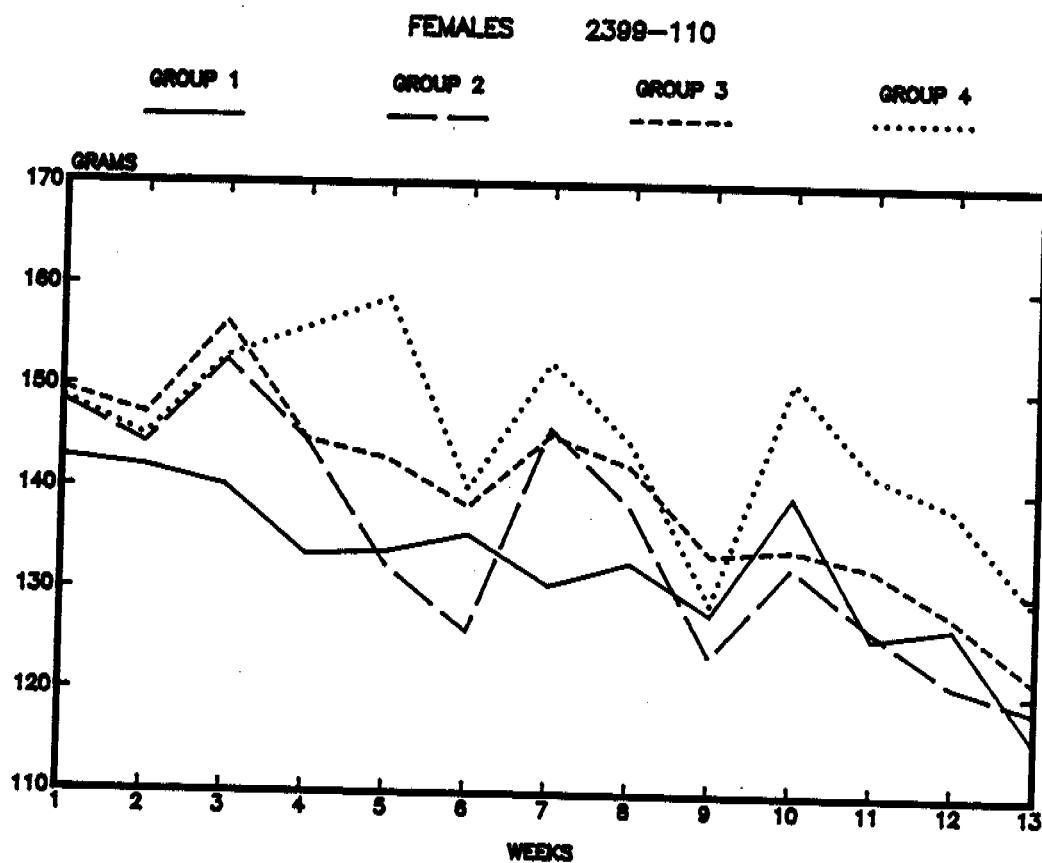
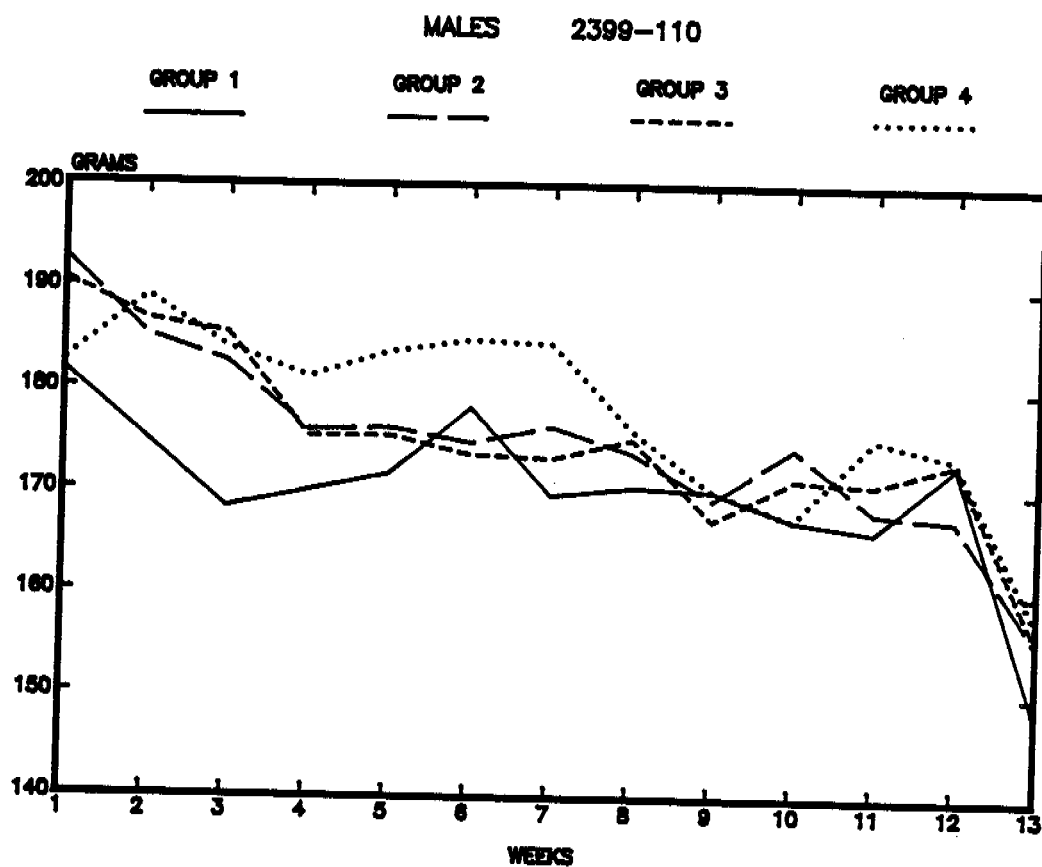


FIGURE 3 - MEAN FOOD CONSUMPTION



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There were a few significant differences in clinical chemistry parameters at Week 5, all in the Group 4 females: phosphorus, cholesterol, and alanine aminotransferase were all increased. However, there were no significant changes in either sex at Week 13.

Organ Weights and Organ-to-Body Weight Ratios

Mean organ weights (absolute) and organ-to-body weight ratios (relative) are presented in Tables 8 and 9, respectively; individual values are presented in Appendix 8.

There were no significant differences between the control and treated groups of either sex in any of the absolute or relative organ weights.

Gross Pathology

Gross pathology incidence summaries are presented in Tables 10A (Terminal Sacrifice) and 10B (Unscheduled Deaths); individual gross observations are presented in Appendix 8.

Few gross lesions were observed at necropsy. Most of these were infrequent and showed no dose relationship. Mottled lungs and failure of the lungs to collapse were seen more frequently than other lesions and only in unscheduled deaths.

Histopathology

Histopathology incidence summaries are presented in Tables 11A (Terminal Sacrifice) and 11B (Unscheduled Deaths); individual data are presented in Appendix 8. Evaluation of microscopic findings is included in the Pathology Summary.

In both treated and control animals, lesions were present in the liver (e.g., mononuclear cell infiltrates, subacute inflammation, fatty change) and kidneys (e.g., tubular regeneration, focal mononuclear cell



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infiltrates, interstitial fibrosis). Intra-alveolar foreign material was present in the lungs of nearly all unscheduled deaths. This finding was often associated with congestion and appeared to be secondary to vehicle and/or test material aspiration. Various incidental lesions were present in all groups without relation to treatment. In the tissues examined, no specific compound-related histopathologic alterations were present.

Analytical Chemistry

Analytical chemistry methods and results are included as Appendix 9.

Stability data showed that after 21 days there was no loss for samples stored at 5°C and a mean loss of less than 1% for samples stored at room temperature. Dose verification analyses showed that all samples analyzed were within the specified limits ($\pm 10\%$ of target concentration).

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DISCUSSION

Xylene (mixed) is a mixture of m-Xylene, p-Xylene, o-Xylene, and ethylbenzene. The exact proportion is variable and depends on the material (petroleum or coal tar) from which it is produced. In this study the p-Xylene (99% purity) was tested. In previous studies with xylenes (mixed) conducted by the NTP in rats, deaths were noted at 4,000 and 6,000 mg/kg in a single dose study and at 2,000 mg/kg in a 14-day study. In the 13-week study all rats at dose levels up to 1,000 mg/kg survived to termination. Also mean body weights were 15% and 8% lower than control in the males and females, respectively. No signs of clinical toxicity were observed, and no compound-related gross or microscopic lesions were observed. In a 2-year study, males dosed at 1,000 mg/kg had a slightly higher mortality rate than did vehicle controls, but the number of gavage deaths were also higher. It was postulated that the dosed males resisted gavaging because of the xylenes. In the 2-year study, no nonneoplastic or neoplastic lesions resulted from exposure to xylene(mixed).

In this 90-day study conducted with the p-xylene isomer, mortality was noted in all groups and was significantly increased in the Group 4 males. Additionally, the incidence of salivation was increased in the Group 4 males and females, and mean body weights were slightly decreased with food consumption slightly increased in Group 4 males and females. Histopathology revealed no compound-related changes. The deaths in the treated groups are most likely the result of vehicle/test material aspiration since there was no physical evidence of trauma (perforated trachea and/or esophagus) and the low vapor pressure of xylene (about 10 mmHg at 28°C). Although the findings in this study suggest that p-Xylene is slightly more toxic than xylene (mixed), these findings are generally consistent with those noted by the NTP using xylene (mixed).



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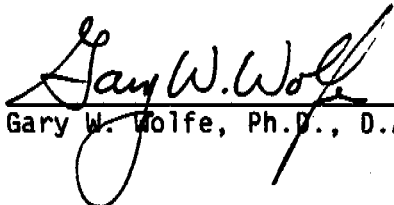
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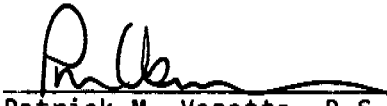
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Based on the results of this study, with the assumption of vehicle and/or test material aspiration producing the deaths in the treated animals, the no-observed-effect-level (NOEL) of p-Xylene was 200 mg/kg/day.

Study Director:

 6/3/88
Gary W. Wolfe, Ph.D., D.A.B.T.

Study Coordinator:

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Patrick M. Vanatta, B.S.

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PATHOLOGY SUMMARY

Subchronic Toxicity Study in Rats with p-Xylene

One-hundred-sixty Sprague-Dawley rats (80 males, 80 females) were divided into four groups as noted below:

<u>Group Number</u>	<u>Number of Animals/Sex/Group</u>	<u>Dosage Levels mg/kg/day</u>
1 (Control)	20	0
2 (Low)	20	100
3 (Mid)	20	200
4 (High)	20	800

After 13 weeks of compound administration, animals were necropsied and tissues were fixed in 10% neutral buffered formalin and examined microscopically according to protocol specifications. All tissues from animals in Groups 1 and 4 and all unscheduled deaths from Groups 2 and 3 were evaluated histologically. In the remaining animals, only lungs, livers, kidneys, and gross lesions were evaluated.

There were no specific compound-related histopathologic lesions present in the treatment groups examined. The remarkable findings present in the livers of both treatment and control rats included portal mononuclear cell infiltrates, subacute inflammation, and fatty change. In one Group 3 and three Group 4 male rats (all unscheduled deaths), cytoplasmic hyaline inclusions were present. The nature of these cytoplasmic inclusions was unclear; however, the low overall incidence, presence only in males, and absence in terminally sacrificed rats suggested this finding may have little biologic significance.



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The most remarkable lung finding was present in nearly all of the unscheduled deaths and consisted of intra-alveolar foreign material. This finding was often associated with congestion and appears secondary to vehicle and/or compound aspiration. Intra-alveolar macrophages and interstitial pneumonia were generally present in both control and treated animals and were not specifically associated with aspiration of the compound. In the kidney, remarkable findings in all groups included tubular regeneration, focal mononuclear cell infiltrates, and interstitial fibrosis, all of which were consistent with typical early rat nephropathy. There were no major differences between control and treated animals.

Various spontaneous and incidental lesions were present in all groups at the expected incidence and frequency for rats of this age and strain. Most findings were scored minimal to slight and occurred without relation to treatment.

In conclusion, the administration of p-Xylene to rats for 90 days resulted in no specific compound-related histopathological alterations.

Pathologist:

Ricardo Quander, D.V.M.
Diplomate, American College of
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Life Sciences Division



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TABLE 1
Adjusted Survival

	WEEK													
	0	1	2	3	4	5	6	7	8	9	10	11	12	13
<u>Males</u>														
Group 1	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
Group 2	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
Group 3	20/20	20/20	20/20	20/20	20/20	18/20	18/20	18/20	18/20	18/20	18/20	17/20	17/20	17/20
Group 4	20/20	20/20	20/20	20/20	20/20	18/20	18/20	18/20	17/20	17/20	16/20	16/20	16/20	16/20
<u>Females</u>														
Group 1	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
Group 2	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	19/20	19/20	19/20	18/20	18/20	18/20
Group 3	20/20	19/20	19/20	19/20	19/20	19/20	19/20	19/20	18/20	18/20	18/20	18/20	18/20	18/20
Group 4	20/20	19/20	19/20	19/20	19/20	19/20	18/20	17/20	17/20	17/20	17/20	17/20	17/20	17/20

TABLE 2
SUMMARY INCIDENCE OF CLINICAL SIGNS ^a

OBSERVATION	MALES				FEMALES			
	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 1	GROUP 2	GROUP 3	GROUP 4
THIN	1	0	0	0	0	0	0	1
TEETH CUT	1	2	2	1	0	2	0	0
HALOCCCLUSION	2	2	2	1	1	2	1	0
APPEARANCE / OTHER ^b	0	0	0	0	0	0	0	1
LANGUID	1	0	0	0	0	0	0	0
SENSITIVE TO TOUCH	0	1	2	0	0	1	0	0
SALIVATION	0	0	0	7	0	0	0	10
SOFT FECES	1	0	0	0	0	0	0	0
EXCRETIONS / OTHER ^c	0	0	1	0	0	0	0	0
DYSPEA	1	0	0	0	0	0	0	0
URINE STAINS	0	0	0	0	0	0	0	1
ALOPECIA	0	1	1	0	2	1	3	0
ROUGH HAIRCOAT	1	0	0	0	0	0	0	0
SORES	4	10	10	11	9	8	5	7
SKIN / OTHER ^d	0	0	0	0	0	1	0	0
OPAGUE	2	1	1	0	0	0	0	0
CHROMODACRYORRHEA	2	1	3	1	2	2	1	0
EXOPHTHALMUS	0	0	0	0	0	0	1	1
ULCERATED	0	0	0	0	0	0	1	1
EYES / OTHER ^e	0	0	0	0	0	0	1	0
SWOLLEN ^f	0	0	0	0	0	0	1	1
MISSING ^f	0	0	0	0	0	0	1	1
SMALL MOVEABLE TISSUE MASS	0	0	0	0	0	0	1	0

^a Total number of animals showing sign during the study.

^b tooth missing

^c blood in urine

^d ear torn

^e red film over eye

^f right eye

TABLE 3
INCIDENCE OF DAILY OBSERVATIONS^a
(WEEKLY TOTALS, BY SEX AND GROUP)
Incidence of Sensitive to Touch

	WEEK													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14 ^b
<u>Males</u>														
Group 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 4	2/20	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Females</u>														
Group 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^aNumber of observations during week/number of survivors in group at beginning of week. Dash indicates no incidence during week.

^bPartial week (terminal sacrifice).

TABLE 3
INCIDENCE OF DAILY OBSERVATIONS^a
(WEEKLY TOTALS, BY SEX AND GROUP)
Incidence of Salivation

	WEEK													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14 ^b
<u>Males</u>														
Group 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 4	-	19/20	66/20	68/20	31/20	39/18	49/18	35/18	40/17	31/17	38/16	24/16	21/16	20/16
<u>Females</u>														
Group 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Group 4	-	16/19	60/19	54/19	39/19	60/19	55/18	55/17	55/17	46/17	59/17	47/17	35/17	26/17

^aNumber of observations during week/number of survivors in group at beginning of week. Dash indicates no incidence during week.

^bPartial week (terminal sacrifice).

TABLE 4A
MEAN BODY WEIGHTS AND STANDARD DEVIATIONS (G)
SUBCHRONIC TOXICITY STUDY IN RATS

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GROUP AND
DOSE LEVEL
(MG/KG)

WEEK: START	1	2	3	4	5	6	7	8	9	10	11	12	13
MALES													
1	MEAN 229.6	272.8	313.9	352.9	387.2	404.5	430.6	453.7	471.3	489.2	506.8	518.6	529.4
	S.D. 12.84	17.77	17.21	21.02	27.17	34.27	37.27	43.06	46.78	49.57	52.77	58.01	58.82
.000	N 20	20	20	20	20	20	20	20	20	20	20	20	20
2	MEAN 233.6	281.7	325.3	367.1	400.9	422.0	451.2	476.7	496.0	511.5	526.8	538.6	545.9
	S.D. 11.79	12.72	18.03	19.80	25.42	29.17	32.90	33.09	34.19	39.42	44.58	47.14	53.69
100.000	N 20	20	20	20	20	20	20	20	20	20	20	20	20
3	MEAN 231.8	283.8	328.4	371.2	400.5	424.7	454.4	478.7	495.8	510.7	525.6	535.0	548.3
	S.D. 10.56	11.74	18.15	21.29	41.48	33.48	36.41	40.35	45.47	47.24	48.93	51.34	52.84
200.000	N 20	20	20	20	20	18	18	18	18	18	18	17	17
4	MEAN 232.7	275.6	318.6	351.8	378.7	397.7	427.4	443.9	461.0	474.1	479.3	495.2	500.0
	S.D. 9.73	19.52	20.25	21.46	31.28	36.02	37.90	46.66	44.12	46.78	49.88	55.28	53.55
800.000	N 20	20	20	20	20	18	18	18	17	17	16	16	16
FEMALES													
1	MEAN 174.8	195.9	215.8	235.6	249.6	258.2	270.9	281.5	287.3	291.6	304.0	300.9	306.5
	S.D. 6.62	8.71	10.09	13.57	16.79	16.52	19.31	19.14	22.11	26.93	28.43	29.95	30.23
.000	N 20	20	20	20	20	20	20	20	20	20	20	20	20
2	MEAN 176.8	197.2	217.9	237.5	253.4	262.7	270.9	280.4	286.6	293.5	296.2	299.9	302.6
	S.D. 7.15	10.22	14.39	16.18	19.81	18.51	25.19	27.34	25.62	27.32	28.23	30.81	31.83
100.000	N 20	20	20	20	20	20	20	20	19	19	19	18	18
3	MEAN 175.8	196.1	221.7	242.7	256.9	265.7	278.6	290.7	298.6	307.6	311.7	318.3	321.2
	S.D. 10.21	14.03	11.02	14.02	14.06	15.50	19.71	17.27	22.49	21.21	22.82	22.89	24.06
200.000	N 20	19	19	19	19	19	19	19	18	18	18	18	18
4	MEAN 175.4	194.9	216.8	232.4	246.8	257.2	264.7	274.7	280.0	286.1	291.8	296.0	299.7
	S.D. 6.73	12.10	13.69	16.10	20.79	16.60	11.18	16.06	15.54	18.60	16.51	16.03	17.91
800.000	N 20	19	19	19	19	19	18	17	17	17	17	17	17

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TABLE 48
MEAN BODY WEIGHT CHANGE (G)
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSE LEVEL (MG/KG)	0 - 13		WEEK	
	MEAN	S.D.	N	
MALES				
1	305.9	63.93	20	
2	320.7	53.53	19	
3	327.8	53.87	17	
4	272.2	57.13	16	
FEMALES				
1	135.1	30.46	20	
2	134.9	34.26	18	
3	148.2	21.16	18	
4	120.0	25.79	17	

TABLE 5A
MEAN FOOD CONSUMPTION AND STANDARD DEVIATIONS (G/WK)
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND
DOSE LEVEL
(MG/KG)

WEEK:	1	2	3	4	5	6	7	8	9	10	11	12	13
MALES													
1	MEAN 181.6	175.0	168.2	169.9	171.6	178.2	169.6	170.4	170.1	167.2	166.1	172.8	148.8
	S.D. 10.73	10.73	12.84	15.75	19.70	19.28	23.41	20.57	16.02	15.71	16.74	17.65	24.23
.000	N 20	20	20	20	10	20	19	20	20	20	20	19	19
2	MEAN 192.7	185.1	182.6	176.0	176.2	174.7	176.4	173.8	169.3	174.4	168.0	167.3	155.7
	S.D. 12.61	18.27	16.39	21.88	18.06	13.45	17.06	16.22	15.43	18.92	14.61	13.94	18.73
100.000	N 20	19	19	19	10	18	19	19	20	20	19	20	18
3	MEAN 190.6	186.7	185.4	175.3	175.4	173.5	173.2	175.2	167.2	171.8	170.8	173.1	156.0
	S.D. 12.81	15.87	13.75	33.41	16.21	12.67	19.77	18.67	23.01	16.85	19.18	18.02	15.77
200.000	N 20	18	19	20	8	17	17	15	18	17	17	16	16
4	MEAN 182.7	189.0	184.0	181.2	183.7	184.8	184.5	176.1	170.1	167.3	175.3	173.5	157.8
	S.D. 20.44	15.49	16.25	25.37	23.55	16.78	17.80	16.11	17.66	21.58	17.43	19.09	27.68
800.000	N 19	20	19	20	10	18	16	14	17	16	13	16	15
FEMALES													
1	MEAN 142.9	142.0	140.1	133.5	133.8	135.5	130.6	132.9	127.8	127.7	125.6	126.7	115.7
	S.D. 16.31	20.13	24.21	20.49	17.40	17.63	16.96	17.54	15.77	17.80	22.14	16.52	14.71
.000	N 18	18	19	17	9	19	17	20	20	19	18	20	20
2	MEAN 148.3	144.3	152.5	144.6	132.3	126.0	141.5	138.3	123.7	132.6	126.3	121.0	118.5
	S.D. 16.95	16.89	26.05	19.91	16.61	10.06	27.77	23.63	15.36	25.32	19.69	11.70	16.98
100.000	N 16	13	19	18	9	17	16	13	16	17	15	15	14
3	MEAN 149.5	147.2	156.3	144.8	142.9	138.3	145.4	142.3	133.7	134.3	132.4	127.8	121.5
	S.D. 14.15	8.99	26.94	14.96	19.79	18.29	20.28	15.16	9.65	18.51	8.77	14.14	12.49
200.000	N 15	17	16	15	7	18	16	13	16	18	17	18	16
4	MEAN 148.7	145.0	152.9	155.9	158.8	140.1	152.6	144.6	128.8	150.9	141.7	138.4	128.9
	S.D. 19.89	18.16	27.03	19.90	28.83	14.04	25.69	22.97	12.81	28.69	24.92	19.88	37.77
800.000	N 18	17	18	15	5	14	13	12	10	17	14	14	13

TABLE 5B
MEAN TOTAL FOOD CONSUMPTION AND STANDARD DEVIATIONS (G)
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSE LEVEL (MG/KG)	WEEK			
	1 - 5	6 - 9	10 - 13	
	MALES			
1	MEAN 879.8	686.4	656.9	
.000	S.D. 71.75	72.48	67.13	
	N 10	19	18	
2	MEAN 900.6	688.6	666.1	
100.000	S.D. 68.32	51.57	54.76	
	N 9	16	17	
3	MEAN 902.9	686.7	663.2	
200.000	S.D. 53.14	59.67	57.23	
	N 5	15	15	
4	MEAN 921.2	716.4	671.5	
800.000	S.D. 82.18	63.92	64.21	
	N 10	13	12	
	FEMALES			
1	MEAN 655.5	520.8	485.8	
.000	S.D. 50.46	66.60	52.15	
	N 6	16	17	
2	MEAN 692.7	514.7	488.4	
100.000	S.D. 90.31	54.64	50.85	
	N 7	10	12	
3	MEAN 721.0	557.1	509.7	
200.000	S.D. 71.25	34.13	21.48	
	N 4	12	15	
4	MEAN 733.4	543.1	535.8 ^s	
800.000	S.D. 44.13	53.78	48.11	
	N 3	8	9	

TABLE 6 - CONTINUED
MEAN CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSAGE LEVEL	WBC			TH/UL			BLAST			META			BAND		
	MEAN	S.D.	N	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK
				-1	5	13	-1	5	13	-1	5	13	-1	5	13
MALE															
1 0 MG/KG	MEAN			14.1	13.3		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			2.64	1.33		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			9	10		9	10	9	10	9	10	9	10	10
2 100 MG/KG	MEAN			17.1	14.3		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			4.02	2.90		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			10	10		10	10	10	10	10	10	10	10	10
3 200 MG/KG	MEAN			14.3	13.4		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			2.70	2.56		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			10	10		10	10	10	10	10	10	10	10	10
4 800 MG/KG	MEAN			16.9	13.1		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			4.56	2.47		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			9	10		9	10	9	10	9	10	9	10	10
5 BASELINE	MEAN						.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.						.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			9.5	2.14		5	5	5	5	5	5	5	5	5
FEMALE															
1 0 MG/KG	MEAN			15.3	10.2		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			2.47	2.33		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			10	10		10	10	10	10	10	10	10	10	10
2 100 MG/KG	MEAN			17.5	13.1		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			4.36	3.15		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			10	10		10	10	10	10	10	10	10	10	10
3 200 MG/KG	MEAN			16.1	10.8		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			3.47	2.18		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			10	10		10	10	10	10	10	10	10	10	10
4 800 MG/KG	MEAN			17.7	12.3		.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.			3.08	3.50		.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			10	10		10	10	10	10	10	10	10	10	10
5 BASELINE	MEAN						.0	.0	.0	.0	.0	.0	.0	.0	.0
	S.D.						.00	.00	.00	.00	.00	.00	.00	.00	.00
	N			11.5	2.31		5	5	5	5	5	5	5	5	5

TABLE 6 - CONTINUED
MEAN CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSAGE LEVEL		SEG TH/UL (%)			LYMPH TH/UL (%)			MONO TH/UL (%)			EOSIN TH/UL (%)			
		WEEK			WEEK			WEEK			WEEK			
		-1	5	13	-1	5	13	-1	5	13	-1	5	13	
MALE														
1 0 MG/KG	MEAN	2.5 ^A	3.1 ^A	11.3	9.8	11.3	9.8	3	2	3	2	1	0	
	S.D. N	2.05 9	1.40 10	2.75 9	1.02 10	2.75 9	1.02 10	.26 9	.21 10	.26 9	.21 10	.07 9	.22 10	
2 100 MG/KG	MEAN	2.4	2.1	14.5	11.9	14.5	11.9	1	1	1	1	2	2	
	S.D. N	1.73 10	.95 10	2.87 10	2.62 10	2.87 10	2.62 10	.13 10	.13 10	.13 10	.13 10	.15 10	.13 10	
3 200 MG/KG	MEAN	1.7	1.7 ^S	12.3	11.5	12.3	11.5	1	1	1	1	1	1	
	S.D. N	.55 10	.72 10	3.80 10	2.12 10	3.80 10	2.12 10	.13 10	.11 10	.13 10	.11 10	.13 10	.10 10	
4 800 MG/KG	MEAN	2.9	2.1	13.8	10.8	13.8	10.8	2	1	2	1	1	2	
	S.D. N	1.38 9	.64 10	3.69 9	2.34 10	3.69 9	2.34 10	.25 9	.15 10	.25 9	.15 10	.19 9	.18 10	
5 BASELINE	MEAN	1.3		8.1		8.1		1		1		0		
	S.D. N	.67 5		2.00 5		2.00 5		.14 5		.14 5		.00 5		
FEMALE														
1 0 MG/KG	MEAN	2.1 ^A	1.4 ^A	12.9	8.6	12.9	8.6	1	1	1	1	2	1	
	S.D. N	.78 10	.64 10	2.23 10	2.36 10	2.23 10	2.36 10	.22 10	.08 10	.22 10	.08 10	.19 10	.11 10	
2 100 MG/KG	MEAN	4.3	2.1	12.9	10.8	12.9	10.8	2	1	2	1	1	1	
	S.D. N	3.45 10	1.27 10	3.03 10	3.33 10	3.03 10	3.33 10	.26 10	.08 10	.26 10	.08 10	.18 10	.12 10	
3 200 MG/KG	MEAN	2.8	1.3	12.9	9.2	12.9	9.2	1	0	1	0	2	2	
	S.D. N	1.75 10	.62 10	3.11 10	1.91 10	3.11 10	1.91 10	.21 10	.05 10	.21 10	.05 10	.16 10	.14 10	
4 800 MG/KG	MEAN	2.8	2.1	14.6	10.0	14.6	10.0	1	0	1	0	2	1	
	S.D. N	1.77 10	1.32 10	3.02 10	3.27 10	3.02 10	3.27 10	.15 10	.07 10	.15 10	.07 10	.14 10	.11 10	
5 BASELINE	MEAN	1.2		10.2		10.2		1		1		2	1	
	S.D. N	.54 5		2.07 5		2.07 5		.09 5		.09 5		.14 10	.11 10	

TABLE 6 - CONTINUED
 MEAN CLINICAL HEMATOLOGY VALUES
 SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSAGE LEVEL	BASO TH/UL(%)			MALE
	WEEK	5	13	
	-1			
1 0 MG/KG	MEAN	.0	.0	MALE
	S.D.	.00	.00	
	N	9	10	
2 100 MG/KG	MEAN	.0	.0	
	S.D.	.00	.00	
	N	10	10	MALE
3 200 MG/KG	MEAN	.0	.0	
	S.D.	.00	.00	
	N	10	10	
4 800 MG/KG	MEAN	.0	.0	
	S.D.	.00	.00	
	N	9	10	FEMALE
5 BASELINE	MEAN	.0		
	S.D.	.00		
	N	5		
1 0 MG/KG	MEAN	.0	.0	FEMALE
	S.D.	.00	.00	
	N	10	10	
2 100 MG/KG	MEAN	.0	.0	
	S.D.	.00	.00	
	N	10	10	FEMALE
3 200 MG/KG	MEAN	.0	.0	
	S.D.	.00	.00	
	N	10	10	
4 800 MG/KG	MEAN	.0	.0	
	S.D.	.00	.00	
	N	10	10	FEMALE
5 BASELINE	MEAN	.0		
	S.D.	.00		
	N	5		

TABLE 7
MEAN CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSAGE LEVEL	SODIUM MMOL/L			POTAS MMOL/L			CHLORIDE MMOL/L			T PROT WEEK		
	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK
	-1	5	13	-1	5	13	-1	5	13	-1	5	13
MALE												
1 0 MG/KG	MEAN S.D. N	146.2 1.51 10	149.2 2.56 10	6.18 ^B .425 10	6.17 .247 10	107.1 .89 10	105.9 2.21 10	6.3 .42 10	6.4 .31 10	6.3 .42 10	6.3 .42 10	6.4 .31 10
2 100 MG/KG	MEAN S.D. N	145.5 1.23 10	148.5 2.26 10	6.26 .625 10	5.91 .281 10	105.9 2.65 10	104.4 2.76 10	6.2 .38 10	6.4 .35 10	6.2 .38 10	6.2 .38 10	6.4 .35 10
3 200 MG/KG	MEAN S.D. N	145.0 2.21 10	149.2 1.29 10	6.23 .278 10	6.03 .216 10	106.7 1.52 10	104.5 1.84 10	6.3 .34 10	6.5 .39 10	6.3 .34 10	6.3 .34 10	6.5 .39 10
4 800 MG/KG	MEAN S.D. N	145.7 .93 10	148.9 1.85 10	6.38 .403 10	6.35 .255 10	107.0 1.38 10	104.5 1.55 10	6.3 .31 10	6.7 .40 10	6.3 .31 10	6.3 .31 10	6.7 .40 10
5 BASELINE	MEAN S.D. N	144.7 1.47 5	6.37 .628 5	105.0 2.43 5	5.4 .21 5							47
FEMALE												
1 0 MG/KG	MEAN S.D. N	144.1 1.67 10	146.9 2.54 10	6.13 .469 10	5.79 ^F .262 10	107.9 2.01 10	105.8 1.93 10	6.7 .41 10	6.8 .35 10	6.7 .41 10	6.7 .41 10	6.8 .35 10
2 100 MG/KG	MEAN S.D. N	144.6 2.69 10	147.3 1.53 10	5.91 .477 10	5.90 .300 10	107.8 1.89 10	105.1 1.98 10	6.7 .36 10	7.1 .32 10	6.7 .36 10	6.7 .36 10	7.1 .32 10
3 200 MG/KG	MEAN S.D. N	145.0 1.69 10	147.5 1.69 10	6.35 .506 10	5.97 .446 10	108.3 1.21 10	106.2 1.85 10	6.8 .31 10	7.0 .33 10	6.8 .31 10	6.8 .31 10	7.0 .33 10
4 800 MG/KG	MEAN S.D. N	144.3 2.56 10	147.5 2.01 10	6.20 .685 10	5.94 .183 10	107.6 2.68 10	106.3 3.31 10	6.8 .32 10	6.7 .24 10	6.8 .32 10	6.8 .32 10	6.7 .24 10
5 BASELINE	MEAN S.D. N	144.0 1.02 5	6.37 .963 5	105.1 1.79 5	5.4 .25 5							

TABLE 7 - CONTINUED
 MEAN CLINICAL CHEMISTRY VALUES
 SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSAGE LEVEL	ALBUMIN G/DL			GLOBULIN G/DL			A/G			RATIO			CALCIUM MG/DL		
	WEEK			WEEK			WEEK			WEEK			WEEK		
	-1	5	13	-1	5	13	-1	5	13	-1	5	13	-1	5	13
MALE															
1 0 MG/KG	MEAN S.D. N	4.0 .22 10	3.8 .12 10	2.3 .26 10	2.5 .27 10	1.74 .168 10	1.52 .159 10	10.5 .36 10	10.4 .36 10	10.8 .56 5	10.9 .40 5	10.7 .39 10	10.5 .45 10	10.8 .34 10	10.8 .30 10
2 100 MG/KG	MEAN S.D. N	3.8 .41 10	3.7 .43 10	2.4 .19 10	2.7 .37 10	1.60 .227 10	1.43 .276 10	10.6 .26 10	10.4 .27 10	10.7 .38 10	10.8 .53 10	10.4 .36 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
3 200 MG/KG	MEAN S.D. N	4.0 .18 10	3.9 .21 10	2.3 .25 10	2.6 .27 10	1.75 .186 10	1.50 .154 10	10.4 .31 10	10.4 .31 10	10.7 .38 10	10.8 .56 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
4 800 MG/KG	MEAN S.D. N	4.0 .21 10	4.0 .14 10	2.3 .16 10	2.8 .31 10	1.74 .129 10	1.45 .124 10	10.7 .38 10	10.6 .38 10	10.8 .56 5	10.9 .40 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
5 BASELINE	MEAN S.D. N	3.7 .19 5	1.7 .21 5	2.16 .348 5	2.7 .56 10	1.46 .291 10	1.60 .495 10	10.5 .45 10	10.7 .39 10	10.8 .56 5	10.9 .40 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
FEMALE															
1 0 MG/KG	MEAN S.D. N	4.0 .51 10	4.1 .77 10	2.8 .30 10	2.7 .56 10	1.46 .291 10	1.60 .495 10	10.5 .45 10	10.7 .39 10	10.8 .56 5	10.9 .40 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
2 100 MG/KG	MEAN S.D. N	4.2 .26 10	4.4 .28 10	2.5 .17 10	2.6 .18 10	1.67 .123 10	1.70 .177 10	10.4 .36 10	10.8 .27 10	10.7 .38 10	10.8 .56 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
3 200 MG/KG	MEAN S.D. N	4.1 .25 10	4.3 .22 10	2.6 .23 10	2.6 .25 10	1.59 .197 10	1.66 .199 10	10.3 .58 10	10.8 .34 10	10.7 .38 10	10.8 .56 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
4 800 MG/KG	MEAN S.D. N	4.2 .51 10	4.2 .18 10	2.6 .46 10	2.5 .15 10	1.65 .344 10	1.71 .131 10	10.8 .53 10	10.8 .30 10	10.7 .38 10	10.8 .56 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10
5 BASELINE	MEAN S.D. N	3.7 .20 5	1.7 .08 5	2.15 .116 5	2.7 .56 10	1.46 .291 10	1.60 .495 10	10.5 .45 10	10.7 .39 10	10.8 .56 5	10.9 .40 5	10.5 .45 10	10.3 .58 10	10.8 .34 10	10.8 .30 10

TABLE 7 - CONTINUED
 MEAN CLINICAL CHEMISTRY VALUES
 SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSAGE LEVEL	BUN			CREAT			GLUCOSE			T CHOL		
	MEAN S.D. N	MG/DL WEEK	13	WEEK	MG/DL WEEK	13	WEEK	MG/DL WEEK	13	WEEK	MG/DL WEEK	13
		-1	5	-1	5	13	-1	5	13	-1	5	13
MALE												
1 0 MG/KG	MEAN S.D. N	11 1.3 10	13 2.9 10	.6 .07 10	97 8.2 10	.6 .10 10	120 13.5 10	68 ^F 19.0 10	73 ^A 20.2 10			
2 100 MG/KG	MEAN S.D. N	11 4.0 10	15 13.1 10	.6 .08 10	98 9.9 10	.7 .27 10	114 20.3 10	94 79.1 10	104 115.6 10			
3 200 MG/KG	MEAN S.D. N	11 2.0 10	11 1.8 10	.6 .07 10	102 10.2 10	.6 .07 10	113 12.0 10	61 9.1 10	70 18.0 10			
4 800 MG/KG	MEAN S.D. N	9 2.2 10	11 4.4 10	.6 .10 10	95 8.5 10	.6 .07 10	104 12.4 10	81 19.2 10	95 16.9 10			
5 BASELINE	MEAN S.D. N	14 4.5 5		.7 .00 4			94 13.6 5	90 17.9 4				
FEMALE												
1 0 MG/KG	MEAN S.D. N	18 3.9 10	18 ^A 11.3 10	.6 .09 10	91 11.0 10	.7 .16 10	103 14.9 10	142 ^F 118.8 10	164 ^F 171.8 10			
2 100 MG/KG	MEAN S.D. N	14 3.1 10	13 2.2 10	.6 .07 10	97 12.8 10	.7 .07 10	110 17.9 10	90 12.1 10	92 13.3 10			
3 200 MG/KG	MEAN S.D. N	14 3.9 10	12 2.0 10	.6 .05 10	83 7.4 10	.6 .08 10	117 19.4 10	100 17.4 10	89 16.3 10			
4 800 MG/KG	MEAN S.D. N	16 7.9 10	12 3.3 10	.7 .23 10	88 19.1 10	.6 .07 10	108 14.9 10	158 ^S 129.6 10	106 17.3 10			
5 BASELINE	MEAN S.D. N	15 1.5 5		.6 .08 4			101 2.7 5	108 34.1 5				

TABLE 7 - CONTINUED
MEAN CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DOSAGE LEVEL	IN PHOS MG/DL			T BILI MG/DL		
	WEEK			WEEK		
	-1	5	13	-1	5	13
	MEAN					
	S.D.					
	N					
1 0 MG/KG	9.3	7.9		.0	.1	
	.70	.46		.04	.07	
	10	10		10	10	
2 100 MG/KG	9.2	7.6		.0	.0	
	.68	.86		.07	.05	
	10	10		10	10	
3 200 MG/KG	8.9	7.4		.0	.1	
	.65	.53		.05	.08	
	10	10		10	10	
4 800 MG/KG	9.5	8.0		.0	.0	
	.62	.51		.05	.03	
	10	10		10	10	
5 BASELINE	10.5			.1		
	.41			.12		
	4			4		
	MEAN					
	S.D.					
	N					
1 0 MG/KG	8.2	6.8		.1	.1	
	.72	.98		.07	.07	
	10	10		10	10	
2 100 MG/KG	8.3	6.5		.1	.0	
	1.02	1.02		.07	.05	
	10	10		10	10	
3 200 MG/KG	8.9	7.1		.1	.1	
	.84	.59		.07	.07	
	10	10		10	10	
4 800 MG/KG	9.7 ^a	7.1		.1	.0	
	1.20	.53		.06	.04	
	10	10		10	10	
5 BASELINE	10.5			.0		
	.58			.00		
	5			5		
	MEAN					
	S.D.					
	N					

FEMALE

TABLE 7 - CONTINUED
MEAN CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP AND DIOSAGE LEVEL		AST	WEEK	U/L	*	ALT	WEEK	U/L	*	ALK P	WEEK	U/L	*	LDH	WEEK	U/L
		-1	5	13	*	-1	5	13	*	-1	5	13	*	-1	5	13
		MALE														
1 0 MG/KG	MEAN	106	57	31 ^F	26 ^F	161	74	512	166							
	S.D.	51.6	7.0	8.0	4.6	29.0	14.0	198.9	110.3							
	N	10	10	10	10	10	10									
2 100 MG/KG	MEAN	92	53	31	24	136	71	412	148							
	S.D.	33.6	9.9	5.8	1.2	33.7	13.8	201.5	149.1							
	N	10	10	10	10	10	10									
3 200 MG/KG	MEAN	92	54	36	24	151	76	430	127							
	S.D.	19.9	3.6	14.0	4.2	23.2	7.1	232.9	57.5							
	N	10	10	10	10	10	10									
4 800 MG/KG	MEAN	105	56	35	27	154	74	535	131							
	S.D.	55.8	6.1	7.2	4.7	20.4	18.3	237.2	53.4							
	N	10	10	10	10	10	10									
5 BASELINE	MEAN	135	32	292	643											
	S.D.	56.5	10.3	105.4	169.5											
	N	5	5	5	5											
FEMALE																
1 0 MG/KG	MEAN	83	52	28	24	74	39	503	159							
	S.D.	17.4	11.2	2.1	7.0	21.0	9.1	175.9	103.8							
	N	10	10	10	10	10	10									
2 100 MG/KG	MEAN	95	55	26	26	105	53	643	112							
	S.D.	14.3	8.3	5.9	10.3	29.5	16.4	175.9	36.6							
	N	10	10	10	10	10	10									
3 200 MG/KG	MEAN	99	62	29	24	110	52	690	193							
	S.D.	10.4	14.1	5.5	6.1	34.6	17.1	252.2	119.3							
	N	10	10	10	10	10	10									
4 800 MG/KG	MEAN	90	54	35 ⁸	28	104	45	476	125							
	S.D.	22.4	4.7	6.1	4.7	41.8	18.1	182.3	102.6							
	N	10	10	10	10	10	10									
5 BASELINE	MEAN	163	35	178	592											
	S.D.	128.5	14.2	56.9	113.8											
	N	5	5	5	5											

TABLE INCLUDES:

SEX=ALL;GROUP=ALL;WEEKS=ALL
DEATH=T;SUBSET=ALL

SEX:		MALE				FEMALE			
GROUP:		1	2	3	4	1	2	3	4
NUMBER:		19	18	17	16	20	18	17	15
>>> TERMINAL BODY WEIGHT (g) <<<									
# IN GRP.:	19	18	17	16	20	18	17	15	
MEAN:	519.0	529.9	532.5	478.0	293.7	289.3	307.7	276.1	
STAND DEV:	64.6	63.8	53.0	54.7	30.5	30.8	23.6	15.4	
>>> AD - ADRENAL <<<									
# IN GRP.:	14 ^F	8	7	6	15	8	7	5	
MEAN:	.065	.065	.060	.065	.074	.072	.071	.072	
STAND DEV:	.007	.015	.015	.017	.010	.011	.014	.010	
>>> OV - OVARY <<<									
# IN GRP.:	0	0	0	0	15	8	7	5	
MEAN:					.142	.135	.126	.128	
STAND DEV:					.030	.023	.012	.028	
>>> BR - BRAIN W/STEM <<<									
# IN GRP.:	14	8	7	6	15	8	7	5	
MEAN:	2.22	2.21	2.14	2.24	1.99	2.09	2.07	2.03	
STAND DEV:	.10	.14	.13	.16	.14	.13	.11	.04	
>>> HT - HEART <<<									
# IN GRP.:	14	8	7	6	15	8	7	5	
MEAN:	1.55	1.56	1.45	1.38	.94	.98	.99	.87	
STAND DEV:	.29	.24	.30	.15	.11	.15	.06	.08	
>>> SP - SPLEEN <<<									
# IN GRP.:	14	8	7	6	15	8	7	5	
MEAN:	.92	.84	.86	.78	.66	.62	.68	.58	
STAND DEV:	.19	.18	.16	.07	.14	.10	.12	.06	

TABLE 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
ABSOLUTE ORGAN WEIGHT MEANS (q)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

TABLE INCLUDES:
SEX=ALL; GROUP=ALL; WEEKS=ALL
DEATH=T; SUBSET=ALL

SEX:		MALE				FEMALE			
GROUP:	NUMBER	1	2	3	4	1	2	3	4
	19	17	16	20	18	17	15		
>>> KD - KIDNEY <<<									
# IN GRP.:	14 F	7	6	15	8	7	5		
MEAN:	3.43	3.56	3.69	2.42	2.13	2.16	2.17		
STAND DEV:	.50	.25	.29	.89	.25	.19	.27		
>>> LI - LIVER <<<									
# IN GRP.:	14	7	6	15	8	7	5		
MEAN:	13.65	15.17	13.61	8.16	7.84	8.37	8.22		
STAND DEV:	2.89	2.74	1.24	1.87	1.36	.69	.69		
>>> TP - TESTIS/EPIDID <<<									
# IN GRP.:	14	7	6	0	0	0	0		
MEAN:	5.74	5.31	5.26						
STAND DEV:	.45	.38	.43						

TABLE 9

ORGAN TO TERMINAL BODY WEIGHT RATIO MEANS (%)

STUDY NUMBER: 2399110

LE INCLUDES:
SEX=ALL;GROUP=ALL;WEEKS=ALL
DEATH=T;SUBSET=ALL

SEX: GROUP: NUMBER:	MALE				FEMALE			
	19	18	17	16	15	14	13	12
# IN GRP.:	14 F	8	7	6	15	8	7	5
MEAN:	.0128	.0129	.0112	.0138	.0261	.0239	.0229	.0258
STAND DEV:	.0015	.0049	.0027	.0038	.0062	.0041	.0045	.0041
>>> AD - ADRENAL <<<								
# IN GRP.:	0	0	0	0	15	8	7	5
MEAN:					.0502	.0451	.0410	.0454
STAND DEV:					.0148	.0081	.0062	.0072
>>> OU - QUARY <<<								
# IN GRP.:	14	8	7	6	15	8	7	5
MEAN:	.438	.426	.405	.473	.698	.699	.671	.726
STAND DEV:	.057	.073	.057	.050	.097	.082	.036	.053
>>> BR - BRAIN W/STEM <<<								
# IN GRP.:	14 F	8	7	6	15	8	7	5
MEAN:	.300	.301	.270	.290	.329	.325	.321	.312
STAND DEV:	.030	.070	.042	.022	.061	.044	.024	.032
>>> HT - HEART <<<								
# IN GRP.:	14	8	7	6	15	8	7	5
MEAN:	.180	.166	.162	.164	.231	.204	.220	.206
STAND DEV:	.036	.064	.034	.011	.065	.029	.030	.021
>>> SP - SPLEEN <<<								
# IN GRP.:	14 F	8	7	6	15	8	7	5
MEAN:	.669	.930	.669	.778	.863	.708	.698	.772
STAND DEV:	.066	.601	.067	.070	.410	.072	.060	.087
>>> KD - KIDNEY <<<								
# IN GRP.:	14 F	8	7	6	15 F	8	7	5
MEAN:	.669	.930	.669	.778	.863	.708	.698	.772
STAND DEV:	.066	.601	.067	.070	.410	.072	.060	.087

ORGAN TO TERMINAL BODY WEIGHT RATIO MEANS (%)

STUDY NUMBER: 2399110

TABLE INCLUDES:

SEX=ALL;GROUP=ALL;WEEKS=ALL
DEATH=T;SUBSET=ALL

SEX:	MALE			FEMALE		
	1	2	3	1	2	3
GROUP:	19	18	17	20	18	17
NUMBER:	19	18	17	20	18	17
>>> LI - LIVER <<<						
# IN GRP.:	14 A	8	7	15	8	7
MEAN:	2.640	2.823	2.831	2.858	2.890	2.726
STAND DEV:	.351	.705	.411	.150	.971	.407
>>> TP - TESTIS/EPIDID <<<						
# IN GRP.:	14	8	7	0	0	0
MEAN:	1.132	1.065	.997	1.107		
STAND DEV:	.157	.185	.082	.076		

GROSS PATHOLOGY INCIDENCE SUMMARY

STUDY NUMBER: 2399110

		--- NUMBER OF ANIMALS - AFFECTED ---									
TABLE INCLUDES:		SEX: ---		MALE		FEMALE					
SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=Y;SUBSET=ALL		GROUP: -1- -2- -3- -4-		-1- -2- -3- -4-							
ORGAN AND KEYWORD(S) OR PHRASE		NUMBER: 19 18 17 16		20 18 17 15							
** TOP OF LIST **											
BRAIN W/STEM (BR)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	19	18	17	16	20	18	17	15		
PITUITARY (PI)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	19	18	17	16	20	18	17	15		
CORD, CERVICAL (CS)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	19	18	17	16	20	18	17	15		
CORD, THORACIC (TC)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	19	18	17	16	20	18	17	15		
CORD, LUMBAR (LC)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	19	18	17	16	20	18	17	15		
NERVE, SCIATIC (SN)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	19	18	17	16	20	18	17	15		
LUNG (LU)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	19	18	17	16	20	18	17	15		
KIDNEY (KD)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15		
	NOT REMARKABLE:	17	16	16	16	17	18	17	15		
PALE		0	1	0	0	2	0	0	0	0	0

TABLE 10A
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

GROSS PATHOLOGY INCIDENCE SUMMARY

--- NUMBER - OF - ANIMALS - AFFECTED ---

TABLE INCLUDES: SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=T;SUBSET=ALL	SEX:		---MALE---		---FEMALE---	
	GROUP:	-1- -2- -3- -4-	-1- -2- -3- -4-	-1- -2- -3- -4-	-1- -2- -3- -4-	-1- -2- -3- -4-
ORGAN AND KEYWORD(S) OR PHRASE	NUMBER:	19 18 17 16	16 16 16 16	20 18 17 15	17 17 17 15	15 15 15 15
** FROM PREVIOUS PAGE **						
KIDNEY (KD)	NUMBER EXAMINED:	19 18 17 16	16 16 16 16	20 18 17 15	17 17 17 15	15 15 15 15
	NOT REMARKABLE:	17 16 16 16	16 16 16 16	17 18 18 17	18 17 17 15	15 15 15 15
GRANULAR/PITTED/ROUGH ENLARGED		0 2 0 0	0 0 0 0	2 0 0 0	0 0 0 0	0 0 0 0
PELVIS, DILATED		0 2 0 0	0 0 0 0	2 0 0 0	0 0 0 0	0 0 0 0
H-PELVIS, DILATED		1 0 0 0	0 0 0 0	1 0 0 0	0 0 0 0	0 0 0 0
		1 0 0 0	1 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
ADRENAL, MEDULLA (AM)	NUMBER EXAMINED:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
	NOT REMARKABLE:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
ADRENAL, CORTEX (AC)	NUMBER EXAMINED:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
	NOT REMARKABLE:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
LIVER (LI)	NUMBER EXAMINED:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
	NOT REMARKABLE:	18 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
H-DARK AREA		1 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
SPLEEN (SP)	NUMBER EXAMINED:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
	NOT REMARKABLE:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
CYST		0 0 0 0	0 0 0 0	1 0 0 0	0 0 0 0	0 0 0 0
PANCREAS (PA)	NUMBER EXAMINED:	19 18 17 16	16 16 16 16	20 18 17 15	18 17 17 15	15 15 15 15
	NOT REMARKABLE:	19 18 16 16	16 16 16 16	20 17 17 15	18 17 17 15	15 15 15 15
GELATINOUS		0 0 0 0	1 0 0 0	0 0 0 0	1 0 0 0	0 0 0 0

GROSS PATHOLOGY INCIDENCE SUMMARY

		--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---											
TABLE INCLUDES: SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=T;SUBSET=ALL	ORGAN AND KEYWORD(S) OR PHRASE	SEX: -----MALE-----FEMALE-----											
		GROUP: -1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-				
		NUMBER: 19	18	17	16	20	18	17	15				
HEART (HT)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			
THYMUS (TH)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			
TRACHEA (TR)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			
THYROID (TY)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			
PARATHYROID (PT)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			
ESOPHAGUS (ES)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			
MAND SALIVARY GL (SG)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			
AORTA, THORACIC (AO)		NUMBER EXAMINED:	19	18	17	16	20	18	17	15			
		NOT REMARKABLE:	19	18	17	16	20	18	17	15			

		--- NUMBER - OF - ANIMALS - AFFECTED ---											
TABLE INCLUDES:		SEX:		MALE				FEMALE					
SEX=ALL; GROUP=ALL; WEEKS=ALL DEATH=T; SURSET=ALL		GROUP:		-1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-		
ORGAN AND KEYWORD(S) OR PHRASE		NUMBER:		19	18	17	16	20	18	17	15		
				---	---	---	---	---	---	---	---		
STOMACH, GL (ST)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	19	18	17	16	20	17	17	15				
RAISED AREA		0	0	0	0	0	0	1	0	0	0		
STOMACH, NONGL (SU)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	19	18	17	15	20	18	17	15				
WALL, THICKENED		0	0	0	1	0	0	0	0	0	0		
DUODENUM (DU)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	19	18	17	16	20	18	17	15				
JEJUNUM (JE)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	19	18	17	16	19	18	17	15				
DARK AREA LUMEN, MATERIAL		0	0	0	0	1	0	0	0	0	0		
		0	0	0	0	1	0	0	0	0	0		
ILEUM (IL)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	19	18	17	16	20	18	17	15				
CECUM (CE)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	19	18	17	15	20	18	17	15				
MUCOSA, DARK		0	0	0	1	0	0	0	0	0	0		

TABLE 10A
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

GROSS PATHOLOGY INCIDENCE SUMMARY

--- NUMBER - OF - AN I M A L S - A F F E C T E D ---

TABLE INCLUDES: SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=Y;SUBSET=ALL									
SEX: -----MALE-----FEMALE-----									
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-									
NUMBER: 19 18 17 16 20 18 17 15									

ORGAN AND KEYWORD(S) OR PHRASE									

COLON (CO)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15
	NOT REMARKABLE:	19	18	17	15	20	18	17	15
INTUSSUSCEPTED									
		0	0	0	1	0	0	0	0
RECTUM (RE)									
	NUMBER EXAMINED:	19	18	17	16	20	18	17	15
	NOT REMARKABLE:	19	18	17	16	20	18	17	15
LN, MESENTERIC (MS)									
	NUMBER EXAMINED:	19	18	17	16	20	18	17	15
	NOT REMARKABLE:	19	18	17	16	20	18	17	15
TESTIS (TE)									
	NUMBER EXAMINED:	19	18	17	16	0	0	0	0
	NOT REMARKABLE:	19	18	15	16	0	0	0	0
SOFT									
		0	0	2	0	0	0	0	0
UNEQUALLY SIZED									
		0	0	1	0	0	0	0	0
EPIDIDYMIS (EP)									
	NUMBER EXAMINED:	19	18	17	16	0	0	0	0
	NOT REMARKABLE:	19	18	17	16	0	0	0	0
OVARY (OV)									
	NUMBER EXAMINED:	0	0	0	0	20	18	17	15
	NOT REMARKABLE:	0	0	0	0	20	18	17	14
CYST									
		0	0	0	0	0	0	0	1
UTERUS (UT)									
	NUMBER EXAMINED:	0	0	0	0	20	18	17	15
	NOT REMARKABLE:	0	0	0	0	20	17	17	14
LUMEN, FLUID									
		0	0	0	0	0	0	0	1

** CONTINUED ON NEXT PAGE **

TABLE 10A
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

GROSS PATHOLOGY INCIDENCE SUMMARY

--- NUMBER - OF - AN I M A L S - A F F E C T E D ---

TABLE INCLUDES: SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=T;SUBSET=ALL	SEX: -----MALE-----		-----FEMALE-----	
	GROUP: -1-	-2-	-3-	-4-
ORGAN AND KEYWORD(S) OR PHRASE	NUMBER: 19	18	17	16
*** FROM PREVIOUS PAGE **				
UTERUS (UT)	NUMBER EXAMINED: 0	0	0	0
	NOT REMARKABLE: 0	0	0	0
	0	0	0	0
DISTENDED				
URINARY BLADDER (UB)	NUMBER EXAMINED: 19	18	17	16
	NOT REMARKABLE: 18	18	17	16
H-LUMEN, CALCULUS	1	0	0	0
PROSTATE (PR)	NUMBER EXAMINED: 19	18	17	16
	NOT REMARKABLE: 19	18	17	16
SEMINAL VESICLE (SV)	NUMBER EXAMINED: 19	18	17	16
	NOT REMARKABLE: 19	18	17	16
SKIN (SK)	NUMBER EXAMINED: 19	18	17	16
	NOT REMARKABLE: 19	18	17	16
MAMMARY GLAND (MG)	NUMBER EXAMINED: 19	18	17	16
	NOT REMARKABLE: 19	18	17	16
MUSCLE, SKELETAL (SH)	NUMBER EXAMINED: 19	18	17	16
	NOT REMARKABLE: 19	18	17	16

STUDY NUMBER: 2399110

GROSS PATHOLOGY INCIDENCE SUMMARY

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---

TABLE INCLUDES: SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=T;SUBSET=ALL										
ORGAN AND KEYWORD(S) OR PHRASE	SEX: -----				MALE-----				FEMALE-----	
	GROUP: -1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-		
	NUMBER: 19	18	17	16	20	18	17	15		
EYE (EY)	NUMBER EXAMINED: 19	18	17	16	20	18	17	15		
	NOT REMARKABLE: 17	17	16	16	20	18	16	14		
GLOBE RUPTURED ANTE MORTEM EXTERNAL, OPAQUE	0	0	0	0	0	0	1	1		
	2	1	1	0	0	0	0	0		
LACRIMAL GL, EXO (EO)	NUMBER EXAMINED: 19	18	17	16	20	18	17	15		
	NOT REMARKABLE: 19	18	17	16	20	18	17	15		
BONE, STERNUM (SB)	NUMBER EXAMINED: 19	18	17	16	20	18	17	15		
	NOT REMARKABLE: 19	18	17	16	20	18	17	15		
MARROW, STERNUM (SE)	NUMBER EXAMINED: 19	18	17	16	20	18	17	15		
	NOT REMARKABLE: 19	18	17	16	20	18	17	15		
BONE, FEMUR (FE)	NUMBER EXAMINED: 19	18	17	16	20	18	17	15		
	NOT REMARKABLE: 19	18	17	16	20	18	17	15		
SKIN, OTHER (SS)	NUMBER EXAMINED: 19	18	17	16	20	18	17	15		
	NOT REMARKABLE: 19	18	17	16	19	18	16	15		
ALOPECIA	0	0	0	0	1	0	1	0		
ORGANS, MULTIPLE (OG)	NUMBER EXAMINED: 19	18	17	16	20	18	17	15		
	NOT REMARKABLE: 19	18	17	16	20	18	17	15		

STUDY NUMBER: 2399110

GROSS PATHOLOGY INCIDENCE SUMMARY

--- NUMBER OF - ANIMALS - AFFECTED ---

TABLE INCLUDES:									
SEX=ALL;GROUP=ALL;WEEKS=ALL									
DEATH=T;SUBSET=ALL									
SEX: -----									
-----MALE-----FEMALE-----									
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-									
NUMBER: 19 18 17 16 20 18 17 15									

ORGAN AND KEYWORD(S) OR PHRASE	NUMBER	19	18	17	16	20	18	17	15

LN, OTHER (LN)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15
	NOT REMARKABLE:	19	18	17	16	20	18	17	15

NASAL TURBINATE (NT)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15
	NOT REMARKABLE:	19	18	17	16	20	18	17	15

COLLECTED/TAKEN (XW)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15
	NOT REMARKABLE:	14	8	7	6	15	8	7	5

ELECTRON MICROSCOPY SAMPLE		5	10	10	10	5	10	10	10
** END OF LIST **									

** END OF LIST **

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---									
SEX: -----MALE-----FEMALE-----									
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-									
NUMBER: 1 2 3 4 0 2 3 5									
ORGAN AND KEYWORD(S) OR PHRASE									
** TOP OF LIST **									
BRAIN W/STEM (BR)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	4
SOFT		0	0	0	0	0	0	0	1
PITUITARY (PI)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	4
DARK		0	0	0	0	0	0	0	1
CORD, CERVICAL (CS)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
CORD, THORACIC (TC)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
CORD, LUMBAR (LC)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
NERVE, SCIATIC (SN)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
LUNG (LU)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	0	0	0	0	1	1	0
FAILURE TO COLLAPSE		0	2	2	4	0	1	2	3
MOTTLED		0	2	3	4	0	1	2	2
FLUID FILLED		0	0	0	1	0	0	0	0

** CONTINUED ON NEXT PAGE **

GROSS PATHOLOGY INCIDENCE SUMMARY

--- NUMBER - OF - AN I M A L S - A F F E C T E D ---

TABLE INCLUDES:

SEX=ALL;GROUP=ALL;WEEKS=ALL
 DEATH=UNSCHED;SUBSET=ALL

SEX: ---MALE---FEMALE---

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 1 2 3 4 0 2 3 5

ORGAN AND KEYWORD(S) OR PHRASE

** FROM PREVIOUS PAGE **

LUNG (LU) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
 NOT REMARKABLE: 1 0 0 0 0 1 1 0

DARK

0 0 0 0 0 0 0 2

KIDNEY (KD)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
 NOT REMARKABLE: 1 2 3 4 0 2 3 5

ADRENAL, MEDULLA (AM)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
 NOT REMARKABLE: 1 2 3 4 0 2 3 5

ADRENAL, CORTEX (AC)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
 NOT REMARKABLE: 1 2 3 4 0 2 3 5

LIVER (LI)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
 NOT REMARKABLE: 0 2 2 3 0 2 3 4

MOTTLED
 PALE AREA
 PALE

0 0 1 0 0 0 0 0
 0 0 0 1 0 0 0 1
 1 0 0 0 0 0 0 0

SPLEEN (SP)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
 NOT REMARKABLE: 1 2 3 4 0 2 2 5

CAPSULE, PALE FILM

0 0 0 0 0 0 1 0

PANCREAS (PA)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
 NOT REMARKABLE: 1 2 3 4 0 2 3 5

GROSS PATHOLOGY INCIDENCE SUMMARY

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---

TABLE INCLUDES:

SEX=ALL;GROUP=ALL;WEEKS=ALL
DEATH=UNSCHED;SUBSET=ALL

SEX: ---MALE---FEMALE---

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 1 2 3 4 0 2 3 5

ORGAN AND KEYWORD(S) OR PHRASE

HEART (HT) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

THYMUS (TH) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 2 5

CYST 0 0 0 0 0 0 0 1 0

TRACHEA (TR) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

THYROID (TY) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

PARATHYROID (PT) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

ESOPHAGUS (ES) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

MAND SALIVARY GL (SG) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

AORTA, THORACIC (AO) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

TABLE INCLUDES:		--- NUMBER - OF - ANIMALS - AFFECTED ---											
SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=UNSCHED;SUBSET=ALL		SEX: -----				MALE-----				FEMALE-----			
GROUP:		-1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-				
NUMBER:		1	2	3	4	0	2	3	5				
ORGAN AND KEYWORD(S) OR PHRASE													
STOMACH, GL (ST)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5				
	NOT REMARKABLE:	1	2	3	4	0	2	3	4				
DISTENDED LUMEN, FLUID		0	0	0	0	0	0	0	1				
		0	0	0	0	0	0	0	1				
STOMACH, NONGL (SU)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5				
	NOT REMARKABLE:	0	2	3	4	0	2	3	5				
LUMEN, GAS DISTENDED		1	0	0	0	0	0	0	0				
		1	0	0	0	0	0	0	0				
DUODENUM (DU)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5				
	NOT REMARKABLE:	0	2	3	4	0	2	3	5				
LUMEN, GAS		1	0	0	0	0	0	0	0				
		1	0	0	0	0	0	0	0				
JEJUNUM (JE)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5				
	NOT REMARKABLE:	0	2	3	4	0	2	2	5				
DARK AREA LUMEN, GAS		0	0	0	0	0	0	0	1	0			
		1	0	0	0	0	0	0	0	0			
ILEUM (IL)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5				
	NOT REMARKABLE:	0	2	3	4	0	2	3	5				
LUMEN, GAS		1	0	0	0	0	0	0	0				
		1	0	0	0	0	0	0	0				
CECUM (CE)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5				
	NOT REMARKABLE:	0	2	3	4	0	2	3	5				
LUMEN, GAS		1	0	0	0	0	0	0	0				
		1	0	0	0	0	0	0	0				

TABLE 10B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 26-APR-89
PAGE: 68

GROSS PATHOLOGY INCIDENCE SUMMARY

STUDY NUMBER: 2399110

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---

TABLE INCLUDES:

SEX=ALL;GROUP=ALL;WEEKS=ALL
DEATH=UNSCHED;SUBSET=ALL

SEX: -----MALE-----FEMALE-----

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

ORGAN AND KEYWORD(S) OR PHRASE

NUMBER: 1 2 3 4 0 2 3 5

** FROM PREVIOUS PAGE **
CECUM (CE)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 0 2 3 4 0 2 3 5

DISTENDED

1 0 0 0 0 0 0 0

COLON (CO)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 0 2 3 4 0 2 3 5

LUMEN, GAS

1 0 0 0 0 0 0 0

RECTUM (RE)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

LN, MESENTERIC (MS)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

TESTIS (TE)

NUMBER EXAMINED: 1 2 3 4 0 0 0 0
NOT REMARKABLE: 1 2 3 4 0 0 0 0

EPIDIDYMISS (EP)

NUMBER EXAMINED: 1 2 3 4 0 0 0 0
NOT REMARKABLE: 1 2 3 4 0 0 0 0

OVARY (OV)

NUMBER EXAMINED: 0 0 0 0 0 0 0 0
NOT REMARKABLE: 0 0 0 0 0 0 0 0

UTERUS (UT)

NUMBER EXAMINED: 0 0 0 0 0 0 0 0
NOT REMARKABLE: 0 0 0 0 0 0 0 0

GROSS PATHOLOGY INCIDENCE SUMMARY

STUDY NUMBER: 2399110

--- NUMBER - OF - ANIMALS - AFFECTED ---

TABLE INCLUDES: SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=UNSCHED;SUBSET=ALL									
ORGAN AND KEYWORD(S) OR PHRASE	SEX:		---MALE---				---FEMALE---		
	GROUP: -1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-	
	NUMBER:	1	2	3	4	0	2	3	5

URINARY BLADDER (UB)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

PROSTATE (PR)	NUMBER EXAMINED:	1	2	3	4	0	0	0	0
	NOT REMARKABLE:	1	2	3	4	0	0	0	0

SEMINAL VESICLE (SV)	NUMBER EXAMINED:	1	2	3	4	0	0	0	0
	NOT REMARKABLE:	1	2	3	4	0	0	0	0

SKIN (SK)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

MAMMARY GLAND (MG)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

MUSCLE, SKELETAL (SM)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

EYE (EY)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

LACRIMAL GL, EXO (EO)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

TABLE 10B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
GROSS PATHOLOGY INCIDENCE SUMMARY

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2392110

--- NUMBER OF ANIMALS AFFECTED ---

TABLE INCLUDES: SEX=ALL;GROUP=ALL;WEEKS=ALL DEATH=UNSCHED;SUBSET=ALL									
SEX: -----MALE-----FEMALE-----									
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-									
NUMBER: 1 2 3 4 0 2 3 5									

ORGAN AND KEYWORD(S) OR PHRASE	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

BONE, STERNUM (SB)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

MARROW, STERNUM (SE)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

BONE, FEMUR (FE)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5

SKIN, OTHER (SS)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	1	4	0	2	3	5

SORE		0	0	2	0	0	0	0	0

ORGANS, MULTIPLE (OG)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	4

DARK SOFT		0	0	0	0	0	0	0	1
		0	0	0	0	0	0	0	1

LN, OTHER (LN)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	1	1	5

ENLARGED		0	0	0	0	0	1	1	0
DARK		0	0	0	0	0	0	1	0
UNEQUALLY SIZED		0	0	0	0	0	0	0	1

TABLE INCLUDES:

SEX=ALL;GROUP=ALL;WEEKS=ALL

DEATH=UNSCHED;SUBSET=ALL

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---																	
		SEX: -----		---MALE---		---FEMALE---											
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-																	
NUMBER: 1 2 3 4 0 2 3 5																	

ORGAN AND KEYWORD(S) OR PHRASE																	

NASAL TURBINATE (NT)		NUMBER EXAMINED: 1 2 3 4 0 2 3 5															
		NOT REMARKABLE: 0 2 3 4 0 2 3 5															
FRACTURE																	
		1 0 0 0 0 0 0 0															
^COLLECTED/TAKEN (XW)		NUMBER EXAMINED: 1 2 3 4 0 2 3 5															
		NOT REMARKABLE: 1 2 3 4 0 2 3 5															

** END OF LIST **

HISTOPATHOLOGY INCIDENCE SUMMARY

STUDY NUMBER: 2399110

--- NUMBER - OF - ANIMALS - AFFECTED ---

TABLE INCLUDES:
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=T;FIND=ALL;SUBSET=ALL

SEX: ---MALE---FEMALE---

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 19 18 17 16 20 18 17 15

ORGAN AND FINDING DESCRIPTION

** TOP OF LIST **

BRAIN W/STEM (BR) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 16 20 0 0 15

CORD, CERVICAL (CS) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 16 20 0 0 15

CORD, LUMBAR (LC) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 16 20 0 0 15

PITUITARY (PI) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 18 0 0 15 20 0 0 15

--FOCAL DEGENERATION
--FOCAL VACUOLATION

0 0 0 1 0 0 0 0
1 0 0 0 0 0 0 0

CORD, THORACIC (TC) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 16 20 0 0 15

ADRENAL, MEDULLA (AM) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 15 20 0 0 13

--UNILATERALLY EXAMINED

0 0 0 1 0 0 0 2

ADRENAL, CORTEX (AC) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 17 0 0 15 20 0 0 15

--HYPERTROPHY
--FOCAL FATTY CHANGE

1 0 0 1 0 0 0 0
1 0 0 0 0 0 0 0

TABLE INCLUDES:		--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---												
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL DEATH=T;FIND=ALL;SUBSET=ALL		SEX:	-----MALE-----				-----FEMALE-----							
		GROUP:	-1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-				
ORGAN AND FINDING DESCRIPTION		NUMBER:	19	18	17	16	20	18	17	15				
THYROID (TY)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	15				
	NOT REMARKABLE:	19	0	0	0	16	20	0	0	15				
PARATHYROID (PT)	NUMBER EXAMINED:	16	0	0	0	14	16	0	0	14				
	NOT REMARKABLE:	8	0	0	0	7	11	0	0	5				
--UNILATERALLY EXAMINED		8	0	0	0	7	5	0	0	9				
TRACHEA (TR)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	15				
	NOT REMARKABLE:	19	0	0	0	16	20	0	0	15				
ESOPHAGUS (ES)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	15				
	NOT REMARKABLE:	19	0	0	0	16	20	0	0	15				
LUNG (LU)	NUMBER EXAMINED:	19	18	17	16	20	20	18	17	15				
	NOT REMARKABLE:	0	0	0	0	0	0	0	0	0				
--PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID		19	18	17	16	20	20	18	17	15				
--INTRA-ALVEOLAR MACROPHAGES		6	0	1	3	5	5	2	2					
--CONGESTION		0	0	0	1	0	0	0	0	0				
--PERIBRON/PERIVAS, INFILT, NEUTROPHILS		0	2	1	1	1	0	0	0	0				
--PNEUMONIA, INTERSTITIAL		0	3	2	0	2	1	0	0	0				
HEART (HT)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	15				
	NOT REMARKABLE:	8	0	0	0	10	13	0	0	15				
--INFLAMMATION, SUBACUTE		11	0	0	0	5	6	0	0	0				
--FIBROSIS		1	0	0	0	2	2	0	0	0				

		--- NUMBER OF ANIMALS --- AFFECTED ---											
TABLE INCLUDES:		SEX: ---MALE---						---FEMALE---					
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL DEATH=T;FIND=ALL;SUBSET=ALL		GROUP: -1- -2- -3- -4- -1- -2- -3- -4-											
ORGAN AND FINDING DESCRIPTION		NUMBER: 19 18 17 16 20 18 17 15											
		---						---					
SPLEEN (SP)	NUMBER EXAMINED:	19	0	0	16	20	0	1	15				
	NOT REMARKABLE:	19	0	0	16	19	0	0	15				
--CAPSULE, CYST		0	0	0	0	1	0	1	0				
LIVER (LI)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	0	0	0	0	0	0	0	0				
--PORTAL MONONUCLEAR CELL INFILTRATE		19	14	16	16	19	13	17	12				
--INFLAMMATION, SUBACUTE		18	18	17	16	20	18	17	15				
--FATTY CHANGE		6	5	4	6	9	7	6	4				
--COAGULATIVE NECROSIS		1	0	1	0	0	0	1	0				
--NECROSIS, INDIVIDUAL CELL		0	0	1	0	1	0	0	0				
--HEPATOCYTE, HYPERTROPHY		0	0	1	0	0	0	0	0				
--EXTRAMEDULLARY HEMATOPOIESIS, INCREASED		0	0	0	0	1	0	0	0				
KIDNEY (KD)	NUMBER EXAMINED:	19	18	17	16	20	18	17	15				
	NOT REMARKABLE:	5	2	0	0	10	7	6	6				
--TUBULE, REGENERATION		11	12	11	13	7	1	1	5				
--FOCAL MONONUCLEAR CELL INFILTRATE		13	16	16	15	7	10	9	8				
--TUBULE, MINERALIZATION		1	0	0	0	0	1	2	0				
--INTERSTITIUM, FIBROSIS		1	2	0	3	2	0	0	0				
--PELVIS, DILATATION		2	0	0	0	1	0	0	0				
--TRANSITIONAL EPITHELIUM, HYPERPLASIA		0	0	1	2	1	0	0	0				
--CYST		1	0	0	0	0	0	0	0				
--SUPPURATIVE PYELITIS		0	0	1	1	1	0	0	0				
--HYALINE CAST		0	2	1	0	3	1	0	0				
--NEPHROPATHY, CHRONIC PROGRESSIVE		0	2	0	0	2	0	0	0				
--PELVIS, MINERALIZATION		0	0	0	0	0	0	1	0				

HISTOPATHOLOGY INCIDENCE SUMMARY

TABLE INCLUDES:		--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---											
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL DEATH=T;FIND=ALL;SUBSET=ALL		SEX: -----		MALE-----		FEMALE-----							
		GROUP: -1- -2- -3- -4- -1- -2- -3- -4-											
ORGAN AND FINDING DESCRIPTION		NUMBER: 19 18 17 16 20 18 17 15											
PANCREAS (PA)	.....	NUMBER EXAMINED: 19	0	1	16	20	1	0	15				
		NOT REMARKABLE: 13	0	1	14	20	1	0	11				
--INFLAMMATION, SUBACUTE		3	0	0	1	0	0	0	3				
--INDIVIDUAL CELL DEGENERATION/NECROSIS		2	0	0	1	0	0	0	0				
--ACUTE HEMORRHAGIC PANCREATITIS		1	0	0	0	0	0	0	0				
--CYTOPLASMIC ALTERATION, BASOPHILIC		0	0	0	0	0	0	0	1				
STOMACH, GL (ST)	.....	NUMBER EXAMINED: 19	0	0	16	20	1	0	15				
		NOT REMARKABLE: 19	0	0	16	20	0	0	15				
--KERATIN CYST		0	0	0	0	0	1	0	0				
STOMACH, NONGL (SU)	.....	NUMBER EXAMINED: 19	0	0	16	20	0	0	15				
		NOT REMARKABLE: 18	0	0	13	20	0	0	15				
--ACANTHOSIS		1	0	0	3	0	0	0	0				
DUODENUM (DU)	.....	NUMBER EXAMINED: 19	0	0	16	20	0	0	15				
		NOT REMARKABLE: 19	0	0	16	20	0	0	15				
JEJUNUM (JE)	.....	NUMBER EXAMINED: 19	0	0	16	20	0	0	15				
		NOT REMARKABLE: 19	0	0	16	20	0	0	15				
ILEUM (IL)	.....	NUMBER EXAMINED: 19	0	0	16	20	0	0	15				
		NOT REMARKABLE: 19	0	0	16	20	0	0	15				

STUDY NUMBER: 2399110

TABLE 11A
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
HISTOPATHOLOGY INCIDENCE SUMMARY

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

		--- NUMBER OF ANIMALS - AFFECTED ---											
		SEX:		MALE				FEMALE					
		GROUP:		-1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-		
ORGAN AND FINDING DESCRIPTION		NUMBER:		19	18	17	16	20	18	17	15		
CECUM (CE)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	0	15		
	NOT REMARKABLE:	19	0	0	0	15	19	0	0	0	15		
--DILATATION		0	0	0	0	1	1	0	0	0	0		
COLON (CO)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	0	15		
	NOT REMARKABLE:	19	0	0	0	15	20	0	0	0	15		
--DILATATION		0	0	0	0	1	0	0	0	0	0		
RECTUM (RE)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	0	15		
	NOT REMARKABLE:	19	0	0	0	16	20	0	0	0	15		
LN, MESENTERIC (MS)	NUMBER EXAMINED:	19	0	0	0	16	20	0	0	0	15		
	NOT REMARKABLE:	19	0	0	0	16	20	0	0	0	15		
TESTIS (TE)	NUMBER EXAMINED:	19	0	2	16	0	0	0	0	0	0		
	NOT REMARKABLE:	19	0	1	16	0	0	0	0	0	0		
--UNILATERAL ATROPHY		0	0	1	0	0	0	0	0	0	0		
EPIDIDYMIS (EP)	NUMBER EXAMINED:	19	0	1	16	0	0	0	0	0	0		
	NOT REMARKABLE:	9	0	0	9	0	0	0	0	0	0		
--FOCAL MONONUCLEAR CELL INFILTRATE	NUMBER EXAMINED:	10	0	0	7	0	0	0	0	0	0		
	NOT REMARKABLE:	0	0	1	0	0	0	0	0	0	0		
--UNILATERAL ATROPHY		0	0	0	0	0	0	0	0	0	0		
OVARY (OV)	NUMBER EXAMINED:	0	0	0	0	0	20	0	0	0	15		
	NOT REMARKABLE:	0	0	0	0	0	19	0	0	0	15		
--AMYLOIDOSIS		0	0	0	0	0	1	0	0	0	0		

TABLE 11A
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
HISTOPATHOLOGY INCIDENCE SUMMARY

SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=T;FIND=ALL;SUBSET=ALL

STUDY NUMBER: 2399110

PRINTED: 26-APR-88
PAGE: 77

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---

TABLE INCLUDES: SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL DEATH=T;FIND=ALL;SUBSET=ALL											
		SEX:		-----MALE-----				-----FEMALE-----			
GROUP:		-1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-		
NUMBER:		19	18	17	16	20	18	17	15		

ORGAN AND FINDING DESCRIPTION											

UTERUS (UT)		NUMBER EXAMINED:		0	0	0	0	20	1	0	15
		NOT REMARKABLE:		0	0	0	0	16	0	0	14

--DILATATION		0		0	0	0	4	1	0	1	

URINARY BLADDER (UB)		NUMBER EXAMINED:		19	0	0	16	19	0	0	14
		NOT REMARKABLE:		17	0	0	16	17	0	0	13

--FOCAL MONONUCLEAR CELL INFILTRATE		1		0	0	0	0	0	0	1	
--CALCULUS		1		0	0	0	0	0	0	0	
--LUMEN, PROTEINACIOUS MATERIAL		0		0	0	0	1	0	0	0	
--INFLAMMATION, SUBACUTE		0		0	0	0	1	0	0	0	

PROSTATE (PR)		NUMBER EXAMINED:		19	0	0	16	0	0	0	0
		NOT REMARKABLE:		5	0	0	7	0	0	0	0

--LUMEN, DEBRIS, CELLULAR		14		0	0	9	0	0	0	0	
--INFLAMMATION, SUBACUTE		9		0	0	2	0	0	0	0	
--INFLAMMATION, CHRONIC ACTIVE		0		0	0	1	0	0	0	0	

SEMINAL VESICLE (SV)		NUMBER EXAMINED:		19	0	0	16	0	0	0	0
		NOT REMARKABLE:		18	0	0	16	0	0	0	0

--LUMEN, DEBRIS, CELLULAR		1		0	0	0	0	0	0	0	0

THYMUS (TH)		NUMBER EXAMINED:		19	0	0	15	19	0	0	13
		NOT REMARKABLE:		18	0	0	14	19	0	0	13

--EPITHELIAL EMBRYONIC REST		1		0	0	0	0	0	0	0	0
--CYST		0		0	0	1	0	0	0	0	0

TABLE 11A
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
HISTOPATHOLOGY INCIDENCE SUMMARY

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

	SEX	MALE	FEMALE
TABLE INCLUDES:			
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL			
DEATH=T;FIND=ALL;SUBSET=ALL			

ORGAN AND FINDING DESCRIPTION	19	18	17	16	20	18	17	15
MAND SALIVARY GL (SG)	NUMBER EXAMINED:	19	0	0	16	20	0	15
	NOT REMARKABLE:	18	0	0	16	20	0	15
--FOCAL MONONUCLEAR CELL INFILTRATE		1	0	0	0	0	0	0
AORTA, THORACIC (AO)	NUMBER EXAMINED:	19	0	0	16	20	0	15
	NOT REMARKABLE:	19	0	0	16	20	0	15
EYE (EY)	NUMBER EXAMINED:	19	1	1	16	20	0	15
	NOT REMARKABLE:	16	0	0	15	20	0	14
--OPTIC NERVE, FOCAL DEGENERATION		1	0	0	0	0	0	0
--LENS, DEGENERATION		1	1	0	0	0	0	0
--RETINA, DEGENERATION		1	1	0	0	0	0	0
--SYNECHIA, POSTERIOR		1	0	0	0	0	0	0
--KERATITIS		1	0	0	0	0	0	0
--UNILATERALLY EXAMINED		0	0	0	1	0	0	0
--PANOPHTHALMITIS		0	0	1	0	0	0	1
--GLOBE, RUPTURE		0	0	0	0	0	0	1
LACRIMAL GL, EXO (EO)	NUMBER EXAMINED:	19	0	0	15	20	0	15
	NOT REMARKABLE:	9	0	0	11	16	0	15
--INFLAMMATION, SUBACUTE		10	0	0	4	4	0	0
--DEGENERATION		2	0	0	3	0	0	0
--UNILATERALLY EXAMINED		1	0	0	0	0	0	0
NERVE, SCIATIC (SN)	NUMBER EXAMINED:	19	0	0	16	20	0	14
	NOT REMARKABLE:	19	0	0	13	19	0	14
--UNILATERALLY EXAMINED		0	0	0	3	1	0	0

HISTOPATHOLOGY INCIDENCE SUMMARY

STUDY NUMBER: 2399110

TABLE INCLUDES:
SEX=ALL; GROUP=ALL; SCREEN=ALL; WEEKS=ALL
DEATH=T; FIND=ALL; SUBSET=ALL

--- NUMBER OF ANIMALS AFFECTED ---
SEX: --- MALE --- FEMALE ---
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

ORGAN AND FINDING DESCRIPTION

NUMBER: 19 18 17 16 20 18 17 15

SKIN (SK) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 16 20 0 0 15

MAMMARY GLAND (MG) NUMBER EXAMINED: 14 0 0 7 18 0 0 14
NOT REMARKABLE: 14 0 0 7 18 0 0 14

MUSCLE, SKELETAL (SM) NUMBER EXAMINED: 19 0 0 16 20 0 0 14
NOT REMARKABLE: 19 0 0 16 20 0 0 14

BONE, STERNUM (SB) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 16 20 0 0 15

MARROW, STERNUM (SE) NUMBER EXAMINED: 19 0 0 16 20 0 0 15
NOT REMARKABLE: 19 0 0 16 20 0 0 15

BONE, FEMUR (FE) NUMBER EXAMINED: 19 0 0 16 19 0 0 15
NOT REMARKABLE: 19 0 0 14 19 0 0 14

--ARTICULAR SURFACE, NOT PRESENT

0 0 0 2 0 0 0 1

NASAL TURBINATE (NT) NUMBER EXAMINED: 0 0 0 0 0 0 0 0
NOT REMARKABLE: 0 0 0 0 0 0 0 0

SKIN, OTHER (SS) NUMBER EXAMINED: 0 0 0 0 1 0 1 0
NOT REMARKABLE: 0 0 0 0 1 0 0 0

--INFLAMMATION, CHRONIC ACTIVE

0 0 0 0 0 0 0 1

** CONTINUED ON NEXT PAGE **

TABLE 11A
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
HISTOPATHOLOGY INCIDENCE SUMMARY

--- NUMBER OF ANIMALS AFFECTED ---

TABLE INCLUDES:
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=T;FIND=ALL;SUBSET=ALL

SEX: -----MALE-----FEMALE-----

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 19 18 17 16 20 19 17 15

ORGAN AND FINDING DESCRIPTION

*** FROM PREVIOUS PAGE ***

PHYSICIAN'S FINDINGS		NUMBER EXAMINED:		NOT REMARKABLE:	
SKIN, OTHER (SS)	(SS)	0	0	0	0
		0	0	1	0
		0	0	0	0
		0	0	1	0

---HYPERKERATOSIS

LN, OTHER (LN)	.....	NUMBER EXAMINED:	0	0	0	0	0	0
		NOT REMARKABLE:	0	0	0	0	0	0

END OF LIST

--- NUMBER - OF - AN I M A L S - A F F E C T E D ---									
TABLE INCLUDES:									
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL									
DEATH=UNSCHED;FIND=ALL;SUBSET=ALL									
SEX: -----MALE-----FEMALE-----									
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-									
NUMBER: 1 2 3 4 0 2 3 5									
ORGAN AND FINDING DESCRIPTION									
** TOP OF LIST **									
BRAIN W/STEM (BR)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
CORD, CERVICAL (CS)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
CORD, LUMBAR (LC)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
PITUITARY (PI)	NUMBER EXAMINED:	1	2	3	4	0	2	3	4
	NOT REMARKABLE:	1	2	3	4	0	2	2	4
--EMBRYONAL EPITHELIAL REST		0	0	0	0	0	0	1	0
CORD, THORACIC (TC)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	3	4	0	2	3	5
ADRENAL, MEDULLA (AM)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	1	1	4	0	2	3	5
--UNILATERALLY EXAMINED		0	1	2	0	0	0	0	0
ADRENAL, CORTEX (AC)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5
	NOT REMARKABLE:	1	2	2	4	0	2	2	4
--HYPERTROPHY		0	0	0	0	0	0	0	1
--UNILATERALLY EXAMINED		0	0	1	0	0	0	0	0
--INFLAMMATION, SUBACUTE		0	0	0	0	0	0	0	1

--- NUMBER OF ANIMALS - AFFECTED ---

TABLE INCLUDES:

SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=UNSCHEDED;FIND=ALL;SUBSET=ALL

SEX: ---MALE--- ---FEMALE---

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

ORGAN AND FINDING DESCRIPTION

NUMBER: 1 2 3 4 0 2 3 5

THYROID (TY)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 2 5

--INFLAMMATION, SUBACUTE

PARATHYROID (PT)

NUMBER EXAMINED: 0 2 3 3 0 2 2 5
NOT REMARKABLE: 0 1 1 1 0 2 2 4

--UNILATERALLY EXAMINED

TRACHEA (TR)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

ESOPHAGUS (ES)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 1 3 4 0 2 3 5

--FOCAL MYODEGENERATION

LUNG (LU)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 0 0 0 0 0 0 0 0

--PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID

--INTRA-ALVEOLAR MACROPHAGES

--INTRA-ALVEOLAR FOREIGN MATERIAL

--CONGESTION

--EDEMA

--PIGMENT, BROWN

HEART (HT)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 0 1 3 3 0 0 2 4

--INFLAMMATION, SUBACUTE

** CONTINUED ON NEXT PAGE **

HISTOPATHOLOGY INCIDENCE SUMMARY

STUDY NUMBER: 2399110

TABLE INCLUDES:		--- NUMBER - OF - ANIMALS - AFFECTED ---									
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL	SEX:	-----MALE-----					-----FEMALE-----				
DEATH=UNSCHED;FIND=ALL;SUBSET=ALL	GROUP:	-1-	-2-	-3-	-4-	-1-	-2-	-3-	-4-		
ORGAN AND FINDING DESCRIPTION	NUMBER:	1	2	3	4	0	2	3	5		
** FROM PREVIOUS PAGE **											
HEART (HT)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5		
	NOT REMARKABLE:	0	1	3	3	0	0	2	4		
--ATRIA, DILATATION		0	0	0	1	0	0	0	0		
--FOCAL ENDOCARDIAL CELL HYPERPLASIA		0	0	0	0	0	0	0	1		
SPLEEN (SP)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5		
	NOT REMARKABLE:	1	2	3	4	0	2	2	4		
--PIGMENT, INCREASED		0	0	0	0	0	0	0	1		
--CAPSULE, FOCAL FIBROSIS		0	0	0	0	0	0	1	0		
LIVER (LI)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5		
	NOT REMARKABLE:	0	0	0	0	0	0	0	2		
--PORTAL MONONUCLEAR CELL INFILTRATE		0	1	2	3	0	1	2	0		
--INFLAMMATION, SUBACUTE		0	2	3	3	0	2	2	3		
--FATTY CHANGE		1	1	0	0	0	0	0	1		
--CONGESTION		0	0	0	1	0	0	0	0		
--HYALINE INCLUSION, CYTOPLASMIC		0	0	1	3	0	0	0	0		
--COAGULATIVE NECROSIS		0	0	0	0	0	0	0	1		
KIDNEY (KD)	NUMBER EXAMINED:	1	2	3	4	0	2	3	5		
	NOT REMARKABLE:	1	0	0	0	0	2	3	2		
--TUBULE, REGENERATION		0	2	2	3	0	0	0	3		
--FOCAL MONONUCLEAR CELL INFILTRATE		0	1	3	3	0	0	0	2		
--INTERSTITIUM, FIBROSIS		0	0	0	2	0	0	0	0		
--PELVIS, DILATATION		0	0	0	1	0	0	0	0		
--CYST		0	0	1	0	0	0	0	0		
--HYALINE CAST		0	1	0	0	0	0	0	2		
--CONGESTION		0	1	0	0	0	0	0	0		
--NEPHROPATHY, CHRONIC PROGRESSIVE		0	1	0	0	0	0	0	0		

HISTOPATHOLOGY INCIDENCE SUMMARY

--- NUMBER - OF - ANIMALS - AFFECTED ---

TABLE INCLUDES:
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=UNSCHED;FIND=ALL;SUBSET=ALL

SEX: -----MALE-----FEMALE-----
GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 1 2 3 4 0 2 3 5

ORGAN AND FINDING DESCRIPTION

** FROM PREVIOUS PAGE **

KIDNEY (KD) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 0 0 0 0 2 3 2

--INFLAMMATION, ACUTE

PANCREAS (PA) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 1 3 4 0 2 3 5

--INFLAMMATION, SUBACUTE

STOMACH, GL (ST) NUMBER EXAMINED: 1 2 2 4 0 2 3 4
NOT REMARKABLE: 1 2 2 4 0 2 3 4

STOMACH, NONGL (SU)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

DUODENUM (DU)

NUMBER EXAMINED: 1 2 2 4 0 2 3 5
NOT REMARKABLE: 1 2 2 4 0 2 3 5

JEJUNUM (JE)

NUMBER EXAMINED: 1 2 2 4 0 2 2 5
NOT REMARKABLE: 1 2 2 4 0 2 2 5

ILEUM (IL)

NUMBER EXAMINED: 1 2 2 4 0 2 3 5
NOT REMARKABLE: 1 2 2 4 0 2 3 5

CECUM (CE)

NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

HISTOPATHOLOGY INCIDENCE SUMMARY

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---

TABLE INCLUDES:
SEX=ALL; GROUP=ALL; SCREEN=ALL; WEEKS=ALL
DEATH=UNSCHED; FIND=ALL; SUBSET=ALL

SEX: ---MALE--- ---FEMALE---

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 1 2 3 4 0 2 3 5

ORGAN AND FINDING DESCRIPTION

COLON (CO) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

RECTUM (RE) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

LN, MESENTERIC (MS) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

TESTIS (TE) NUMBER EXAMINED: 1 2 3 4 0 0 0 0
NOT REMARKABLE: 1 2 3 4 0 0 0 0

EPIDIDYMIS (EP) NUMBER EXAMINED: 1 2 3 4 0 0 0 0
NOT REMARKABLE: 1 0 3 3 0 0 0 0

--FOCAL MONONUCLEAR CELL INFILTRATE

OVARY (OV) NUMBER EXAMINED: 0 0 0 0 0 2 3 5
NOT REMARKABLE: 0 0 0 0 0 2 3 5

UTERUS (UT) NUMBER EXAMINED: 0 0 0 0 0 2 3 5
NOT REMARKABLE: 0 0 0 0 0 2 2 5

--DILATATION

0 0 0 0 0 0 1 0

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---

TABLE INCLUDES:
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=UNSCHED;FIND=ALL;SUBSET=ALL

SEX: ---MALE--- ---FEMALE---

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 1 2 3 4 0 2 3 5

ORGAN AND FINDING DESCRIPTION

URINARY BLADDER (UB) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 0 2 3 4 0 2 3 5

--FOCAL MONONUCLEAR CELL INFILTRATE

PROSTATE (PR) NUMBER EXAMINED: 1 2 3 4 0 0 0 0
NOT REMARKABLE: 1 0 1 2 0 0 0 0

--LUMEN, DEBRIS, CELLULAR
--INFLAMMATION, SUBACUTE

SEMINAL VESICLE (SV) NUMBER EXAMINED: 1 2 2 4 0 0 0 0
NOT REMARKABLE: 1 0 0 2 0 0 0 0

--LUMEN, DEBRIS, CELLULAR

THYMUS (TH) NUMBER EXAMINED: 1 2 3 4 0 2 3 4
NOT REMARKABLE: 0 2 3 4 0 2 3 4

--ATROPHY

MAND SALIVARY GL (SG) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

AORTA, THORACIC (AO) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

EYE (EY) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 3 0 2 3 5

--PERIORBITAL SUBACUTE INFLAMMATION

0 0 0 1 0 0 0 0

HISTOPATHOLOGY INCIDENCE SUMMARY

STUDY NUMBER: 2399110

--- NUMBER - OF - ANIMALS - AFFECTED ---

TABLE INCLUDES:
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=UNSCHED;FIND=ALL;SUBSET=ALL

SEX: ---MALE--- ---FEMALE---

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 1 2 3 4 0 2 3 5

ORGAN AND FINDING DESCRIPTION

LACRIMAL GL, EXO (EO) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 1 2 2 0 2 3 5

--INFLAMMATION, SUBACUTE
--DEGENERATION

NERVE, SCIATIC (SN) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 2 5

--INFLAMMATION, SUBACUTE

SKIN (SK) NUMBER EXAMINED: 1 1 3 4 0 2 2 5
NOT REMARKABLE: 1 1 3 4 0 2 2 5

MAMMARY GLAND (MG) NUMBER EXAMINED: 1 1 1 4 0 2 2 5
NOT REMARKABLE: 1 1 1 4 0 2 2 5

MUSCLE, SKELETAL (SM) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

BONE, STERNUM (SB) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

MARROW, STERNUM (SE) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

--- N U M B E R - O F - A N I M A L S - A F F E C T E D ---

TABLE INCLUDES:
SEX=ALL;GROUP=ALL;SCREEN=ALL;WEEKS=ALL
DEATH=UNSCHED;FIND=ALL;SUBSET=ALL

SEX: -----MALE-----FEMALE-----

GROUP: -1- -2- -3- -4- -1- -2- -3- -4-

NUMBER: 1 2 3 4 0 2 3 5

ORGAN AND FINDING DESCRIPTION

BONE, FEMUR (FE) NUMBER EXAMINED: 1 2 3 4 0 2 3 5
NOT REMARKABLE: 1 2 3 4 0 2 3 5

NASAL TURBINATE (NT) NUMBER EXAMINED: 1 0 0 0 0 0 0 0
NOT REMARKABLE: 0 0 0 0 0 0 0 0

--HEMORRHAGE
--GRANULATION TISSUE 1 0 0 0 0 0 0 0
1 0 0 0 0 0 0 0

SKIN, OTHER (SS) NUMBER EXAMINED: 0 0 2 0 0 0 0 0
NOT REMARKABLE: 0 0 0 0 0 0 0 0

--EAR, AURICULAR CHONDROPATHY
--INFLAMMATION, CHRONIC ACTIVE 0 0 1 0 0 0 0 0
0 0 1 0 0 0 0 0

LN, OTHER (LN) NUMBER EXAMINED: 0 0 0 0 0 1 2 0
NOT REMARKABLE: 0 0 0 0 0 0 0 0

--HYPERPLASIA, LYMPHOID
--MEDIASTINUM, ABSCESS 0 0 0 0 0 1 1 0
0 0 0 0 0 0 1 0

** END OF LIST **



HAZLETON

LABORATORIES AMERICA, INC.

1330 - B PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

HLA 2399-110

- 89 -

APPENDIX 1

Individual Animal Disposition

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL DISPOSITION

ANIMAL-NUMBER (PIN)	DOSE GROUP	SEX	TERMINAL BODY WEIGHT	DEATH CODE	TYPE OF DEATH	DESCRIPTION OF DEATH	DATE OF DEATH	DAY OF STUDY	WEEK OF STUDY
B08602	1	MALE	487.4	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08603	1	MALE	508.0	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08604	1	MALE	531.7	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08605	1	MALE	418.6	M	UNSCHEDULED	UNSCHEDULED DEATH	07/17/86	92	14
B08606	1	MALE	440.2	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08607	1	MALE	445.8	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08608	1	MALE	505.0	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08609	1	MALE	521.9	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08610	1	MALE	453.1	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08611	1	MALE	601.3	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08612	1	MALE	526.4	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08613	1	MALE	528.4	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08614	1	MALE	553.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08615	1	MALE	406.2	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08616	1	MALE	531.2	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08617	1	MALE	631.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08618	1	MALE	507.7	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08619	1	MALE	454.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08620	1	MALE	583.2	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08621	1	MALE	644.4	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08622	2	MALE	552.5	D	UNSCHEDULED	UNSCHEDULED DEATH	07/18/86	93	14
B08623	2	MALE	477.1	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08624	2	MALE	556.2	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08625	2	MALE	509.0	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08626	2	MALE	555.8	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08627	2	MALE	626.6	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08628	2	MALE	381.9	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08629	2	MALE	557.7	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08630	2	MALE	505.6	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08631	2	MALE	537.1	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08632	2	MALE	517.8	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08633	2	MALE	612.8	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08634	2	MALE	554.4	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08635	2	MALE	465.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08636	2	MALE	649.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08637	2	MALE	567.8	D	UNSCHEDULED	UNSCHEDULED DEATH	07/11/86	86	13
B08638	2	MALE	561.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08639	2	MALE	481.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08640	2	MALE	490.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL DISPOSITION

ANIMAL-NUMBER (PIN)	DOSE GROUP	SEX	TERMINAL BODY WEIGHT	DEATH CODE	TYPE OF DEATH	DESCRIPTION OF DEATH	DATE OF DEATH	DAY OF STUDY	WEEK OF STUDY
B08661	2	MALE	498.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08682	3	MALE	510.8	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08683	3	MALE	474.8	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08684	3	MALE	568.5	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08685	3	MALE	530.9	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08686	3	MALE	534.2	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08687	3	MALE	532.6	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08688	3	MALE	480.9	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08689	3	MALE	605.6	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08690	3	MALE	455.6	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08691	3	MALE	628.3	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08692	3	MALE	500.4	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08693	3	MALE	457.4	D	UNSCHEDULED	UNSCHEDULED DEATH	05/20/86	34	5
B08694	3	MALE	418.8	D	UNSCHEDULED	UNSCHEDULED DEATH	05/16/86	30	5
B08695	3	MALE	568.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08696	3	MALE	603.0	D	UNSCHEDULED	UNSCHEDULED DEATH	06/26/86	71	11
B08697	3	MALE	445.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08698	3	MALE	511.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08699	3	MALE	536.8	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08700	3	MALE	562.0	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08701	3	MALE	606.6	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08722	4	MALE	418.1	D	UNSCHEDULED	UNSCHEDULED DEATH	06/10/86	55	8
B08723	4	MALE	513.9	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08724	4	MALE	436.4	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08725	4	MALE	345.7	D	UNSCHEDULED	UNSCHEDULED DEATH	05/19/86	33	5
B08726	4	MALE	481.7	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08727	4	MALE	390.0	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08728	4	MALE	391.6	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08729	4	MALE	398.2	D	UNSCHEDULED	UNSCHEDULED DEATH	05/20/86	34	5
B08730	4	MALE	485.3	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08731	4	MALE	515.1	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08732	4	MALE	489.9	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08733	4	MALE	529.1	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08734	4	MALE	475.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08735	4	MALE	501.8	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08736	4	MALE	512.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08737	4	MALE	512.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08738	4	MALE	396.9	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08739	4	MALE	545.9	D	UNSCHEDULED	UNSCHEDULED DEATH	06/24/86	69	10

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL DISPOSITION

ANIMAL-NUMBER (PIN)	DOSE GROUP	SEX	TERMINAL BODY WEIGHT	DEATH CODE	TYPE OF DEATH	DESCRIPTION OF DEATH	DATE OF DEATH	DAY OF STUDY	WEEK OF STUDY
B08740	4	MALE	433.8	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08741	4	MALE	583.2	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08622	1	FEMALE	281.4	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08623	1	FEMALE	331.7	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08624	1	FEMALE	269.9	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08625	1	FEMALE	278.3	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08626	1	FEMALE	321.0	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08627	1	FEMALE	252.4	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08628	1	FEMALE	223.4	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08629	1	FEMALE	328.8	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08630	1	FEMALE	302.9	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08631	1	FEMALE	288.6	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08632	1	FEMALE	289.1	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08633	1	FEMALE	281.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08634	1	FEMALE	271.7	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08635	1	FEMALE	274.0	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08636	1	FEMALE	309.4	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08637	1	FEMALE	302.2	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08638	1	FEMALE	283.4	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08639	1	FEMALE	344.2	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08640	1	FEMALE	344.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08641	1	FEMALE	295.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08662	2	FEMALE	273.2	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08663	2	FEMALE	316.9	D	UNSCHEDULED	UNSCHEDULED DEATH	06/06/86	51	8
B08664	2	FEMALE	322.4	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08665	2	FEMALE	311.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08666	2	FEMALE	268.8	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08667	2	FEMALE	319.9	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08668	2	FEMALE	288.7	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08669	2	FEMALE	230.7	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08670	2	FEMALE	317.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08671	2	FEMALE	286.7	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08672	2	FEMALE	303.4	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08673	2	FEMALE	257.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08674	2	FEMALE	276.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08675	2	FEMALE	278.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08676	2	FEMALE	279.0	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08677	2	FEMALE	263.7	D	UNSCHEDULED	UNSCHEDULED DEATH	06/29/86	74	11
B08678	2	FEMALE	235.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL DISPOSITION

ANIMAL-NUMBER (PIN)	DOSE GROUP	SEX	TERMINAL BODY WEIGHT	DEATH CODE	TYPE OF DEATH	DESCRIPTION OF DEATH	DATE OF DEATH	DAY OF STUDY	WEEK OF STUDY
B08679	2	FEMALE	289.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08680	2	FEMALE	331.1	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08681	2	FEMALE	338.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08702	3	FEMALE	337.2	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08703	3	FEMALE	322.3	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08704	3	FEMALE	320.6	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08705	3	FEMALE	193.0	D	UNSCHEDULED	UNSCHEDULED DEATH	04/21/86	5	1
B08706	3	FEMALE	280.0	D	UNSCHEDULED	UNSCHEDULED DEATH	06/09/86	54	8
B08707	3	FEMALE	322.7	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08708	3	FEMALE	315.0	D	UNSCHEDULED	UNSCHEDULED DEATH	07/18/86	93	14
B08709	3	FEMALE	269.0	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08710	3	FEMALE	303.9	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08711	3	FEMALE	274.4	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08712	3	FEMALE	298.6	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08713	3	FEMALE	315.1	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08714	3	FEMALE	328.9	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08715	3	FEMALE	315.8	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08716	3	FEMALE	287.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08717	3	FEMALE	322.6	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08718	3	FEMALE	339.0	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08719	3	FEMALE	279.5	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08720	3	FEMALE	269.2	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08721	3	FEMALE	324.9	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08742	4	FEMALE	299.4	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08743	4	FEMALE	186.4	D	UNSCHEDULED	UNSCHEDULED DEATH	06/02/86	47	7
B08744	4	FEMALE	285.7	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08745	4	FEMALE	303.6	D	UNSCHEDULED	UNSCHEDULED DEATH	05/23/86	37	6
B08746	4	FEMALE	258.8	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08747	4	FEMALE	307.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08748	4	FEMALE	258.1	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08749	4	FEMALE	288.4	T	SCHEDULED	TERMINAL SACRIFICE	07/21/86	96	14
B08750	4	FEMALE	270.6	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08751	4	FEMALE	273.9	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08752	4	FEMALE	266.6	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08753	4	FEMALE	260.9	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08754	4	FEMALE	190.3	D	UNSCHEDULED	UNSCHEDULED DEATH	04/20/86	4	1
B08755	4	FEMALE	280.5	T	SCHEDULED	TERMINAL SACRIFICE	07/22/86	97	14
B08756	4	FEMALE	218.6	D	UNSCHEDULED	UNSCHEDULED DEATH	07/18/86	93	14
B08757	4	FEMALE	265.7	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL DISPOSITION

ANIMAL-NUMBER (PIN)	DOSE GROUP	SEX	TERMINAL BODY WEIGHT	DEATH CODE	TYPE OF DEATH	DESCRIPTION OF DEATH	DATE OF DEATH	DAY OF STUDY	WEEK OF STUDY
B08758	4	FEMALE	284.3	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08759	4	FEMALE	332.8	D	UNSCHEDULED	UNSCHEDULED DEATH	07/18/86	93	14
B08760	4	FEMALE	258.6	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14
B08761	4	FEMALE	283.2	T	SCHEDULED	TERMINAL SACRIFICE	07/23/86	98	14



HAZLETON

LABORATORIES AMERICA, INC.

1330 - B PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

HLA 2399-110

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APPENDIX 2

Individual Clinical Signs

APPENDIX 2
INDIVIDUAL CLINICAL OBSERVATIONS
2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
0	1M	8602	SORES	NECK
1	1M	8602	SORES	NECK
2	1M	8602	SORES	NECK
	2M	8660	MALOCCLUSION	
	4M	8728	SALIVATION	
3	1M	8602	SORES	NECK
	1M	8612	SOFT FECES	
	1M	8621	SORES	EAR-RIGHT
	2M	8653	MALOCCLUSION CHROMODACRYORRHEA	EYE-RIGHT
	2M	8654	SENSITIVE TO TOUCH	
	2M	8660	MALOCCLUSION	
	3M	8690	ALOPECIA	HEAD
	4M	8726	SALIVATION	
	4M	8727	SALIVATION	
	4M	8728	SALIVATION	
	4M	8730	SALIVATION	
	4M	8735	SALIVATION	
4	1M	8602	SORES	NECK
	1M	8621	SORES	EAR-RIGHT
	2M	8642	SORES	EAR-RIGHT
	2M	8644	SORES	EAR-RIGHT
	2M	8646	SORES	EAR-RIGHT
	2M	8649	SORES	EAR-RIGHT
	2M	8653	MALOCCLUSION	
			SORES	EAR-RIGHT
	2M	8654	SENSITIVE TO TOUCH	
			SORES	EAR-RIGHT
	2M	8655	SORES	EAR-RIGHT
	2M	8657	SORES	EAR-RIGHT
	2M	8659	SORES	EAR-RIGHT
	2M	8660	MALOCCLUSION	
	3M	8685	SORES	EAR-RIGHT
	3M	8686	SENSITIVE TO TOUCH	
	3M	8688	SORES	EAR-RIGHT
	3M	8689	SORES	EAR-RIGHT
	3M	8690	ALOPECIA	HEAD
	3M	8691	SORES	EAR-RIGHT
	3M	8693	SORES	EAR-RIGHT
	3M	8694	SORES	EAR-RIGHT
	3M	8697	SORES	EAR-RIGHT
	3M	8699	SENSITIVE TO TOUCH	
	3M	8700	SORES	EAR-RIGHT
	3M	8701	SORES	EAR-RIGHT
	4M	8723	SORES	EAR-RIGHT
	4M	8724	SALIVATION	
			SORES	EAR-RIGHT

APPENDIX 2

INDIVIDUAL CLINICAL OBSERVATIONS 2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
4	4M	8726	SORES	EAR-RIGHT
	4M	8728	SALIVATION	
	4M	8730	SALIVATION	
			SORES	EAR-RIGHT
	4M	8732	SORES	EAR-RIGHT
	4M	8733	SORES	EAR-RIGHT
	4M	8735	SALIVATION	
			SORES	EAR-RIGHT
	4M	8736	SORES	EAR-RIGHT
	4M	8738	SORES	EAR-RIGHT
	4M	8739	SORES	EAR-RIGHT
	4M	8740	SORES	EAR-RIGHT
5	1M	8602	SORES	NECK
	1M	8607	OPAQUE	EYE-RIGHT
	2M	8645	OPAQUE	EYE-RIGHT
	2M	8650	SORES	NECK
	2M	8653	MALOCCLUSION	
			SORES	EAR-RIGHT
	2M	8660	MALOCCLUSION	
	4M	8727	SALIVATION	
	4M	8728	SALIVATION	
	4M	8730	SALIVATION	
	4M	8738	CHROMODACRYORRHEA	EYE-LEFT
6	2M	8645	OPAQUE	EYE-RIGHT
	2M	8653	MALOCCLUSION	
	4M	8738	TEETH CUT	
			MALOCCLUSION	
7	2M	8653	MALOCCLUSION	
8	1M	8602	SORES	NECK
	1M	8607	OPAQUE	EYE-RIGHT
	1M	8615	SORES	EAR-RIGHT
	2M	8645	OPAQUE	EYE-RIGHT
	2M	8653	MALOCCLUSION	
	2M	8655	SORES	EAR-RIGHT
	2M	8658	ALOPECIA	PAWS-FORE-BOTH
	2M	8660	MALOCCLUSION	
	4M	8738	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
9	1M	8602	SORES	NECK
	1M	8607	SORES	NECK
			OPAQUE	EYE-RIGHT
	2M	8645	OPAQUE	EYE-RIGHT
	2M	8653	MALOCCLUSION	
	2M	8658	ALOPECIA	PAWS-FORE-BOTH
	2M	8660	MALOCCLUSION	
	3M	8688	EXCRETIONS / OTHER *	
	3M	8692	MALOCCLUSION	

* Blood in urine

APPENDIX 2
INDIVIDUAL CLINICAL OBSERVATIONS
2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
9	3M	8692	CHROMODACRYORRHEA	EYE-LEFT
	4M	8728	SALIVATION	
	4M	8735	SALIVATION	
	4M	8738	MALOCCLUSION	
10	1M	8607	SORES	NECK
			OPAQUE	EYE-RIGHT
			OPAQUE	EYE-RIGHT
	2M	8645	MALOCCLUSION	
	2M	8653	MALOCCLUSION	
	2M	8660	MALOCCLUSION	
	3M	8692	CHROMODACRYORRHEA	EYE-LEFT
	4M	8738	MALOCCLUSION	EYE-LEFT
11	1M	8606	CHROMODACRYORRHEA	EYES-BOTH
			MALOCCLUSION	EYE-RIGHT
			CHROMODACRYORRHEA	EYE-RIGHT
	1M	8607	OPAQUE	
	2M	8645	OPAQUE	
	2M	8653	MALOCCLUSION	
	2M	8660	MALOCCLUSION	
	3M	8688	MALOCCLUSION	
			EXCRETIONS / OTHER *	
			CHROMODACRYORRHEA	EYE-RIGHT
	3M	8692	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
12	4M	8728	SALIVATION	
	4M	8738	MALOCCLUSION	
			SALIVATION	
			CHROMODACRYORRHEA	EYE-LEFT
			MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
	1M	8607	OPAQUE	EYE-RIGHT
	2M	8645	OPAQUE	EYE-RIGHT
	2M	8653	MALOCCLUSION	
	2M	8660	MALOCCLUSION	
	3M	8688	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-RIGHT
	3M	8692	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
13	3M	8695	SORES	MOUTH
	4M	8730	SALIVATION	
	4M	8738	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
			THIN	ENTIRE BODY
			MALOCCLUSION	
			LANGUID	
			DYSPNEA	
			ROUGH HAIRCOAT	

* Blood in urine

APPENDIX 2
INDIVIDUAL CLINICAL OBSERVATIONS
2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
13	1M	8605	CHROMODACRYORRHEA	EYES-BOTH
	1M	8606	TEETH CUT MALOCCLUSION	
	1M	8607	OPAQUE	EYE-RIGHT
	1M	8608	OPAQUE	EYE-RIGHT
	2M	8645	OPAQUE	EYE-RIGHT
	2M	8653	TEETH CUT MALOCCLUSION	
	2M	8660	TEETH CUT MALOCCLUSION	
	3M	8688	TEETH CUT MALOCCLUSION	
	3M	8691	OPAQUE	EYE-RIGHT
	3M	8692	CHROMODACRYORRHEA TEETH CUT MALOCCLUSION	EYE-RIGHT
	4M	8738	TEETH CUT MALOCCLUSION	

APPENDIX 2
INDIVIDUAL CLINICAL OBSERVATIONS
2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
0	2F	8671	SKIN / OTHER *	EAR-RIGHT
1	2F	8671	SKIN / OTHER *	EAR-RIGHT
2	4F	8756	SALIVATION	
	4F	8758	SALIVATION	
3	2F	8663	SORES	EAR-RIGHT
	2F	8668	MALOCCLUSION	
			CHROMODACRYORRHEA	EYES-BOTH
	3F	8708	SMALL MOVEABLE TISSUE MASS	VENTRL-FT-LEFT
	4F	8751	SALIVATION	
	4F	8753	SALIVATION	
	4F	8758	SALIVATION	
4	1F	8625	SORES	EAR-RIGHT
	1F	8626	SORES	EAR-RIGHT
	1F	8629	SORES	EAR-RIGHT
	1F	8631	SORES	EAR-RIGHT
	1F	8634	SORES	EAR-RIGHT
	1F	8636	SORES	EAR-RIGHT
	1F	8637	SORES	EAR-RIGHT
	1F	8639	SORES	EAR-RIGHT
	1F	8640	SORES	EAR-RIGHT
	2F	8663	SENSITIVE TO TOUCH	
			SORES	EAR-RIGHT
	2F	8667	SORES	EAR-RIGHT
	2F	8668	MALOCCLUSION	
			SORES	EAR-RIGHT
	2F	8671	SORES	EAR-LEFT
	2F	8673	SORES	EAR-RIGHT
	2F	8675	SORES	EAR-RIGHT
	2F	8678	SORES	EAR-RIGHT
	2F	8679	SORES	EAR-RIGHT
	3F	8704	SORES	EAR-RIGHT
	3F	8708	SMALL MOVEABLE TISSUE MASS	VENTRL-FT-LEFT
	3F	8712	SORES	EAR-RIGHT
	3F	8715	SORES	EAR-RIGHT
	3F	8717	SORES	EAR-RIGHT
	4F	8743	SORES	EAR-RIGHT
	4F	8745	SORES	EAR-RIGHT
	4F	8749	SORES	EAR-RIGHT
	4F	8755	SORES	EAR-RIGHT
	4F	8756	SORES	EAR-RIGHT
	4F	8759	SORES	EAR-RIGHT
	4F	8760	SORES	EAR-RIGHT
5	1F	8622	CHROMODACRYORRHEA	EYE-RIGHT
	1F	8636	ALOPECIA	LEGS-FORE-BOTH
			ALOPECIA	LEGS-HIND-BOTH
	2F	8668	MALOCCLUSION	
	2F	8679	SORES	EAR-RIGHT

* Ear torn

APPENDIX 2
INDIVIDUAL CLINICAL OBSERVATIONS
2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
5	3F	8703	EYES / OTHER *	EYE-RIGHT
			SWOLLEN	FACE
	3F	8708	SMALL MOVEABLE TISSUE MASS	VENTRL-FT-LEFT
	3F	8715	ALOPECIA	LEGS-FORE-BOTH
	4F	8743	SALIVATION	
	4F	8746	SALIVATION	
	4F	8747	SALIVATION	
	4F	8748	SALIVATION	
	4F	8750	EYES / OTHER *	EYE-RIGHT
	4F	8751	SALIVATION	
	4F	8758	SALIVATION	
	4F	8759	SORES	EAR-RIGHT
6	2F	8668	TEETH CUT	
			MALOCCLUSION	
	2F	8679	TEETH CUT	
			MALOCCLUSION	
	3F	8703	EXOPHTHALMUS	EYE-RIGHT
			ULCERATED	EYE-RIGHT
	3F	8708	SMALL MOVEABLE TISSUE MASS	VENTRL-FT-LEFT
	3F	8715	ALOPECIA	LEGS-FORE-BOTH
			ALOPECIA	LEGS-HIND-BOTH
	4F	8750	EXOPHTHALMUS	EYE-RIGHT
			ULCERATED	EYE-RIGHT
7	2F	8668	MALOCCLUSION	
	2F	8679	MALOCCLUSION	
	3F	8708	SMALL MOVEABLE TISSUE MASS	VENTRL-FT-LEFT
8	1F	8634	SORES	EAR-RIGHT
	1F	8635	MALOCCLUSION	
	1F	8636	ALOPECIA	PAWS-ALL
	2F	8668	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
	2F	8673	ALOPECIA	PAWS-FORE-BOTH
	2F	8679	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-RIGHT
	3F	8703	ULCERATED	EYE-RIGHT
	3F	8708	SMALL MOVEABLE TISSUE MASS	VENTRL-FT-LEFT
	3F	8720	MALOCCLUSION	
	4F	8750	ULCERATED	EYE-RIGHT
9	1F	8635	MALOCCLUSION	
	1F	8636	ALOPECIA	ABDOMEN
			ALOPECIA	PAWS-ALL
	2F	8668	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
	2F	8673	ALOPECIA	PAWS-FORE-BOTH
	2F	8679	MALOCCLUSION	
			CHROMODACRYORRHEA	EYES-BOTH
	3F	8703	ULCERATED	EYE-RIGHT

* Red film over eye

APPENDIX 2
INDIVIDUAL CLINICAL OBSERVATIONS
2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
9	3F	8708	ALOPECIA	SHOULDER-RIGHT
			SMALL MOVEABLE TISSUE MASS	VENTRL-FT-LEFT
	3F	8712	ALOPECIA	LEG-FORE-RIGHT
	3F	8715	SORES	PAWS-ALL
	3F	8720	MALOCCLUSION	
	4F	8744	SALIVATION	
	4F	8748	SALIVATION	
	4F	8750	ULCERATED	EYE-RIGHT
	4F	8751	SALIVATION	
	4F	8757	SALIVATION	
10	1F	8635	MALOCCLUSION	
	1F	8636	ALOPECIA	PAWS-ALL
	2F	8668	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
	2F	8673	ALOPECIA	PAWS-FORE-BOTH
	2F	8679	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-RIGHT
	3F	8702	CHROMODACRYORRHEA	EYE-RIGHT
	3F	8703	ULCERATED	EYE-RIGHT
	3F	8708	ALOPECIA	SHOULDER-RIGHT
11			SORES	SIDE-LEFT
	3F	8712	ALOPECIA	LEG-FORE-RIGHT
	3F	8715	SORES	PAWS-ALL
	3F	8720	MALOCCLUSION	
	4F	8748	SALIVATION	
	4F	8750	ULCERATED	EYE-RIGHT
	4F	8751	SALIVATION	
	1F	8629	SORES	PAW-FORE-LEFT
	1F	8635	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-RIGHT
12	1F	8636	ALOPECIA	PAWS-ALL
	2F	8668	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
	2F	8673	ALOPECIA	PAWS-FORE-BOTH
	2F	8679	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-RIGHT
	3F	8703	ULCERATED	EYE-RIGHT
	3F	8708	ALOPECIA	SHOULDER-RIGHT
	3F	8712	SORES	PAWS-FORE-BOTH
	3F	8715	SORES	PAWS-ALL
12	3F	8720	MALOCCLUSION	
	4F	8750	ULCERATED	EYE-RIGHT
	4F	8759	APPEARANCE / OTHER *	
	1F	8629	ALOPECIA	PAW-FORE-LEFT
	1F	8635	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-RIGHT
	1F	8636	ALOPECIA	PAWS-ALL

* Tooth missing

APPENDIX 2
INDIVIDUAL CLINICAL OBSERVATIONS
2399-110

WEEK	GROUP & SEX	ANIMAL NUMBER	CLINICAL OBSERVATION	BODY AREA
12	2F	8668	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-LEFT
	2F	8673	ALOPECIA	PAWS-FORE-BOTH
	2F	8679	MALOCCLUSION	
			CHROMODACRYORRHEA	EYE-RIGHT
	3F	8703	ULCERATED	EYE-RIGHT
	3F	8708	ALOPECIA	SHOULDER-RIGHT
	3F	8712	SORES	PAWS-FORE-BOTH
	3F	8715	SORES	PAWS-ALL
	4F	8747	SALIVATION	
	4F	8750	ULCERATED	EYE-RIGHT
	4F	8751	SALIVATION	
	4F	8753	SALIVATION	
	4F	8758	SALIVATION	
13	1F	8635	MALOCCLUSION	
	2F	8668	TEETH CUT	
			MALOCCLUSION	
	2F	8679	TEETH CUT	
			MALOCCLUSION	
	3F	8703	MISSING	EYE-RIGHT
	4F	8750	MISSING	EYE-RIGHT
	4F	8756	THIN	ENTIRE BODY
			URINE STAINS	INGUINALS-BOTH



HAZLETON

LABORATORIES AMERICA, INC.

1330 - B PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

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APPENDIX 3

Individual Body Weights

APPENDIX 3
INDIVIDUAL BODY WEIGHTS (G)
SUBCHRONIC TOXICITY STUDY IN RATS

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ANIMAL NUMBER	WEEKS												
	0	1	2	3	4	5	6	7	8	9	10	11	12
GROUP 1 MALES - CONTROL													
8602	225.7	277.2	321.2	356.6	383.4	390.6	426.1	448.4	443.8	469.6	490.4	495.4	509.9
8603	202.4	249.1	291.9	337.6	377.7	393.7	424.1	451.0	469.7	485.8	495.4	509.2	526.7
8604	220.1	263.0	302.9	342.4	381.6	403.6	440.7	469.9	484.2	510.1	524.7	540.8	557.7
8605	240.4	229.0	301.4	340.8	370.0	377.1	415.0	437.5	463.0	479.9	495.5	504.5	507.5
8606	224.7	266.5	298.0	334.1	356.5	350.6	378.9	399.8	413.6	430.8	449.7	436.0	449.6
8607	223.6	265.1	305.6	344.7	380.0	375.9	395.8	414.2	427.4	440.8	454.4	460.5	469.2
8608	232.7	278.3	322.8	365.0	393.3	405.4	435.9	440.7	468.1	490.8	501.9	520.1	526.5
8609	238.8	289.8	335.6	369.8	403.9	424.6	449.8	473.0	493.1	512.8	526.9	540.2	549.1
8610	224.0	264.6	298.9	331.8	356.7	366.3	380.5	393.7	410.2	423.6	447.9	457.0	469.2
8611	231.5	276.1	322.9	368.9	411.2	414.8	442.5	501.9	533.2	550.8	579.9	598.0	609.9
8612	234.3	289.1	330.8	370.8	412.1	431.7	455.8	475.5	494.6	508.9	517.7	522.7	536.0
8613	231.8	273.6	318.2	354.5	392.4	410.6	434.6	457.8	473.6	491.4	511.8	523.3	534.3
8614	226.6	270.9	306.5	334.9	368.8	389.4	417.5	448.1	462.2	476.1	479.4	506.3	525.5
8615	232.4	275.5	295.5	322.7	345.6	369.1	373.4	387.0	390.8	407.1	416.3	420.0	427.5
8616	238.7	284.3	330.2	363.1	406.1	432.9	450.9	471.8	492.7	503.7	520.6	536.2	540.0
8617	233.6	282.6	306.8	378.7	422.9	457.5	493.0	519.9	545.4	568.7	596.8	621.2	634.6
8618	233.3	280.9	315.2	349.4	381.5	408.4	429.4	436.3	454.8	468.0	491.1	506.4	517.1
8619	199.1	244.1	288.4	321.4	343.3	361.2	387.0	400.9	421.3	432.9	451.7	460.2	484.2
8620	239.6	286.3	329.9	365.5	405.3	442.9	464.1	496.9	515.3	533.9	564.2	577.2	582.3
8621	257.8	309.3	355.3	406.2	451.6	484.0	517.9	549.1	568.8	598.3	620.2	637.4	653.5
GROUP 2 MALES - 100.0000 MG/KG													
8642	216.6	270.0	320.7	371.4	410.9	434.1	449.6	478.8	505.5	525.9	544.4	557.9	558.4
8643	230.4	270.9	311.4	340.6	372.1	385.2	416.1	445.3	457.8	466.3	480.4	495.3	494.6
8644	230.9	290.3	338.7	381.3	416.9	431.0	465.4	494.0	514.3	535.2	538.2	567.5	577.8
8645	250.4	295.3	338.1	377.6	388.1	421.5	453.0	473.2	490.9	499.8	508.2	522.5	535.9
8646	242.6	294.4	345.3	393.9	433.6	445.4	483.3	509.7	529.4	541.0	558.1	566.3	578.0
8647	240.7	296.8	350.4	399.1	449.1	471.2	508.6	537.3	552.6	576.5	608.2	616.8	624.6
8648	220.0	262.4	300.0	350.1	369.8	383.7	403.0	436.8	447.1	449.2	451.9	446.5	413.9
8649	226.2	278.0	322.4	359.8	395.5	399.2	438.2	468.2	499.7	520.0	538.6	552.6	569.9
8650	228.7	285.0	328.6	366.1	395.5	389.3	417.4	438.7	464.0	481.6	499.4	513.4	523.4
8651	239.4	290.3	330.9	376.1	405.6	425.8	451.9	480.4	503.4	517.1	535.7	547.9	554.4
8652	228.0	275.4	318.6	355.6	379.9	405.5	436.8	453.4	479.3	494.9	501.6	507.8	531.2
8653	243.1	289.1	335.2	373.4	408.4	437.6	471.0	497.5	530.9	554.8	581.3	594.8	614.5
8654	231.1	276.3	321.0	362.0	404.6	431.8	458.1	480.9	494.2	517.2	535.8	554.1	555.1
8655	217.5	259.4	295.3	329.9	358.1	388.2	409.1	430.5	447.4	458.7	464.9	478.0	483.4
8656	256.7	306.0	360.8	404.0	454.9	492.5	531.5	555.8	570.8	601.1	619.4	633.4	649.2
8657	246.4	283.4	319.3	367.7	405.8	438.4	465.9	491.5	512.2	524.4	546.1	558.7	564.6
8658	248.5	294.4	344.3	383.1	416.6	444.7	474.5	497.0	515.6	529.0	549.1	560.7	568.1
8659	218.0	266.8	315.4	358.0	391.9	416.0	441.2	465.0	477.1	484.0	491.9	497.0	499.3
8660	231.4	273.4	293.8	340.8	377.3	399.5	431.5	451.5	464.1	477.1	491.6	499.7	510.9
8661	225.2	275.7	315.7	350.6	383.0	399.7	418.8	447.8	464.1	477.1	492.0	500.5	510.8

* = DEAD ANIMAL

APPENDIX 3 - CONTINUED
INDIVIDUAL BODY WEIGHTS (G)
SUBCHRONIC TOXICITY STUDY IN RATS

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ANIMAL NUMBER	GROUP	WEEKS													
		0	1	2	3	4	5	6	7	8	9	10	11	12	13
		200.0000 MG/KG													
		3 MALES													
8682	229.9	280.8	325.3	370.7	398.1	416.1	440.4	472.7	482.1	505.0	515.8	524.9	531.8	532.8	
8683	220.8	268.3	313.1	353.2	263.5	358.7	401.9	425.1	442.1	457.7	471.5	485.2	495.7	500.9	
8684	232.0	285.6	335.7	373.0	415.3	429.5	466.0	485.0	483.2	518.1	540.4	561.1	578.9	587.6	
8685	223.3	278.8	322.9	369.2	406.7	427.2	454.7	476.3	491.8	505.5	527.9	535.9	552.6	553.5	
8686	233.1	290.2	340.7	379.7	412.4	429.9	455.3	484.6	506.6	507.7	511.9	532.5	560.7	563.2	
8687	221.1	278.3	313.2	363.4	390.4	422.7	449.6	467.3	491.3	501.7	514.2	536.3	540.0	565.4	
8688	223.5	272.8	318.2	359.3	383.2	402.1	429.2	448.1	451.2	474.8	489.0	472.4	496.8	503.2	
8689	246.9	309.0	362.4	406.7	454.4	467.3	502.0	529.3	555.1	574.5	596.5	612.4	622.3	623.9	
8690	235.6	280.9	310.7	341.5	370.6	377.7	400.9	413.9	431.4	444.7	453.6	464.6	476.4	474.1	
8691	241.1	295.4	354.6	411.9	455.7	484.4	523.1	559.9	592.7	597.3	611.9	638.3	659.6	659.1	
8692	231.5	285.1	321.2	358.9	384.1	407.0	428.8	453.3	475.9	454.4	477.9	496.4	508.6	521.4	
8693	247.5	301.5	351.6	399.3	423.4	*	*	*	*	*	*	*	*	*	
8694	241.7	286.5	333.2	374.2	420.0	*	*	*	*	*	*	*	*	*	
8695	215.0	272.5	296.7	364.1	406.5	441.3	471.6	495.0	510.9	531.8	547.3	564.4	583.9	595.7	
8696	244.5	297.1	355.9	406.7	451.0	480.8	519.5	546.0	571.4	590.2	611.8	*	*	*	
8697	224.9	270.4	303.8	328.9	353.4	375.8	400.3	416.8	424.4	438.8	449.8	453.4	459.3	466.6	
8698	242.5	289.4	335.8	371.8	402.0	427.3	456.9	475.7	484.7	495.0	512.8	523.6	530.2	542.4	
8699	241.8	292.9	334.1	363.0	396.6	423.0	437.9	469.2	491.5	507.1	516.9	534.8	546.1	562.3	
8700	225.2	275.3	324.3	365.1	407.7	432.2	468.6	493.7	515.0	539.1	548.1	569.5	575.7	593.3	
8701	214.1	264.4	314.1	364.2	415.3	441.1	473.1	504.7	523.5	549.9	563.9	590.0	602.3	628.7	
		800.0000 MG/KG													
		4 MALES													
8722	227.3	279.9	320.7	341.5	359.5	362.2	395.9	406.1	*	*	*	*	*	*	
8723	231.3	270.1	329.1	364.8	394.9	412.1	447.3	465.2	474.7	497.5	516.9	536.7	546.3	539.1	
8724	246.5	290.7	329.2	357.2	383.2	398.0	419.9	433.0	450.8	464.8	421.2	457.5	453.9	460.2	
8725	216.5	248.5	296.0	327.5	345.6	*	*	*	*	*	*	*	*	*	
8726	234.1	278.0	322.6	361.1	393.8	402.6	435.7	449.4	464.1	474.9	490.4	511.3	513.3	517.4	
8727	229.7	272.4	292.8	315.0	329.1	334.1	361.4	369.1	385.7	397.4	406.5	412.7	419.0	417.8	
8728	231.5	275.4	289.2	315.5	337.8	339.9	362.3	371.5	375.7	396.5	405.4	414.0	414.6	407.8	
8729	239.3	285.1	331.0	359.6	387.8	*	*	*	*	*	*	*	*	*	
8730	247.5	292.1	331.2	360.2	391.2	408.7	438.3	458.5	473.3	471.4	497.0	510.0	515.4	508.1	
8731	245.1	300.7	340.6	383.3	409.5	385.7	444.1	472.6	486.2	502.5	511.5	528.0	538.2	542.3	
8732	219.6	265.5	305.3	336.2	371.9	394.7	425.9	445.8	470.3	436.4	479.3	505.1	517.9	512.7	
8733	244.5	292.2	339.4	379.5	412.0	442.2	464.1	492.9	489.5	517.5	533.7	553.6	568.7	556.1	
8734	223.4	248.9	296.1	338.9	367.3	401.7	419.1	432.4	445.1	463.6	467.9	487.2	494.6	503.3	
8735	230.3	283.8	325.5	361.6	391.6	421.1	451.5	476.6	481.1	500.3	518.9	534.6	532.9	547.5	
8736	222.9	220.9	285.9	338.9	380.9	407.2	441.1	462.0	481.7	494.7	474.0	498.1	517.8	542.2	
8737	227.4	275.4	323.9	358.8	395.7	422.7	447.3	468.6	485.8	501.7	514.0	529.3	509.1	534.4	
8738	233.6	276.3	310.5	331.8	308.3	340.3	366.6	349.9	389.9	401.1	405.5	388.3	417.0	423.7	
8739	249.2	306.6	360.8	382.7	423.8	441.8	474.6	498.8	520.6	537.1	*	*	*	*	
8740	223.7	267.6	303.5	338.8	362.9	382.1	401.5	416.6	430.4	448.4	456.1	465.7	454.2	455.7	
8741	230.5	282.1	337.9	382.8	426.8	462.2	496.2	521.1	531.5	554.2	571.1	590.8	586.5	608.8	

* = DEAD ANIMAL

APPENDIX 3 - CONTINUED
INDIVIDUAL BODY WEIGHTS (G)
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	WEEKS													
	0	1	2	3	4	5	6	7	8	9	10	11	12	13
GROUP 1 FEMALES - CONTROL														
8622	168.7	197.3	212.9	238.5	244.3	263.1	262.4	277.9	277.7	276.9	292.9	295.0	296.1	296.1
8623	180.3	211.8	230.1	253.2	272.5	269.5	291.2	308.9	312.7	326.2	344.8	339.2	346.3	348.3
8624	186.2	211.6	227.9	240.1	265.4	260.8	261.3	285.7	282.5	270.7	300.6	254.2	279.4	292.6
8625	178.7	197.2	208.8	229.6	241.9	236.7	258.2	275.4	275.0	274.9	280.7	290.3	293.1	292.5
8626	181.5	195.5	226.7	251.4	264.6	252.8	275.7	304.7	303.2	304.0	329.0	330.0	335.2	327.8
8627	171.3	187.8	198.2	201.2	221.0	224.3	238.2	250.5	250.9	257.8	263.1	262.2	262.0	274.2
8628	170.5	187.6	202.9	224.1	228.6	231.6	246.7	247.5	244.9	243.6	251.4	244.0	240.7	230.3
8629	182.2	206.0	228.4	249.4	271.2	279.6	284.4	302.5	323.5	337.0	337.9	338.5	346.4	352.3
8630	185.3	205.9	225.6	249.0	265.3	263.4	282.7	290.0	298.9	306.0	308.0	312.7	315.0	317.5
8631	175.8	188.7	214.0	241.7	246.8	258.7	277.1	283.9	277.5	290.9	290.9	300.1	300.3	303.7
8632	169.9	192.4	205.8	230.5	247.5	251.0	262.2	272.6	278.5	292.9	296.4	299.0	305.0	308.6
8633	173.7	191.5	209.4	228.6	228.7	252.3	258.9	269.4	280.4	274.6	295.3	288.5	295.2	301.6
8634	169.2	184.4	207.6	215.2	230.5	243.9	239.7	256.8	264.4	247.9	274.2	271.1	284.1	286.0
8635	166.6	191.4	209.4	225.2	239.6	254.6	264.7	264.6	272.8	278.5	289.9	278.2	283.3	288.2
8636	179.9	199.9	228.1	252.9	263.6	264.7	295.2	302.0	300.0	300.7	320.3	316.7	320.9	319.5
8637	161.7	187.5	210.1	230.4	246.6	259.0	271.6	268.9	290.2	296.4	301.4	305.6	313.9	324.2
8638	179.0	206.5	223.5	247.1	265.3	288.1	262.5	273.8	284.9	289.8	295.0	293.2	298.3	297.2
8639	172.5	195.2	208.4	229.1	235.5	256.8	309.8	307.9	324.4	331.9	364.2	351.6	354.3	360.2
8640	172.8	196.2	226.3	241.8	274.5	288.5	300.6	304.1	319.5	331.6	341.6	340.9	352.7	357.8
8641	169.3	183.0	211.6	232.2	238.8	263.7	275.7	282.8	284.0	300.4	302.7	308.0	307.1	318.5
GROUP 2 FEMALES - 100.0000 MG/KG														
8662	177.0	189.8	210.8	219.9	232.7	245.7	244.8	260.0	271.1	275.8	278.1	278.6	290.2	293.6
8663	183.6	202.2	222.6	254.8	286.9	283.4	291.8	319.5	314.4	324.7	342.0	340.1	336.2	347.1
8664	189.8	213.7	241.7	262.7	267.8	281.9	301.8	317.5	309.4	323.8	322.6	321.8	327.9	328.3
8665	183.1	206.3	231.1	252.2	266.8	275.3	285.0	298.2	279.4	287.0	281.5	293.6	282.6	291.0
8666	169.9	188.0	215.9	237.3	238.4	257.6	261.3	284.0	279.4	287.0	281.5	293.6	282.6	291.0
8667	188.0	209.0	234.1	248.6	268.2	277.9	298.8	307.2	317.4	324.1	327.0	327.7	338.8	345.2
8668	172.9	192.0	220.2	244.3	264.0	248.9	257.1	227.7	269.6	282.3	293.7	296.7	306.9	384.9
8669	161.1	177.1	189.1	204.7	217.6	221.8	235.5	239.1	237.0	242.1	246.2	245.3	250.2	240.2
8670	178.2	186.0	190.9	237.3	245.0	269.1	280.8	299.6	302.4	319.6	313.4	331.7	336.8	333.1
8671	172.2	198.4	212.9	240.4	254.0	251.8	274.4	261.1	285.3	284.5	297.8	305.0	301.2	303.1
8672	178.0	212.9	236.2	253.1	270.2	268.5	282.1	291.8	300.3	303.5	311.8	313.9	320.2	324.8
8673	175.0	191.3	210.3	231.5	232.2	244.7	216.9	257.4	269.8	271.0	258.5	273.5	261.2	272.6
8674	179.7	196.2	218.8	226.1	250.9	259.2	265.6	280.1	270.5	283.0	272.7	288.5	282.7	297.5
8675	180.5	198.7	211.9	234.1	252.0	268.9	274.4	283.3	284.5	289.4	292.9	289.7	287.5	290.3
8676	175.8	191.3	214.5	228.8	237.1	258.9	263.7	275.7	281.9	277.9	286.1	283.2	295.6	294.2
8677	180.9	203.6	223.9	235.8	249.7	267.7	277.8	276.6	290.2	294.9	293.0	283.2	295.6	294.2
8678	165.3	179.7	194.2	205.6	215.6	226.0	225.3	235.0	240.2	237.8	246.5	241.6	247.6	248.2
8679	180.3	201.8	225.4	254.3	268.2	273.5	273.5	275.3	282.6	295.7	303.5	282.2	289.4	306.7
8680	172.5	198.6	225.1	247.5	273.9	282.3	303.3	303.9	321.1	325.0	325.5	340.2	346.3	342.4
8681	179.7	206.9	228.9	252.6	276.3	287.0	303.2	315.9	328.8	334.1	335.3	344.7	345.6	356.3

* = DEAD ANIMAL

APPENDIX 3 - CONTINUED
INDIVIDUAL BODY WEIGHTS (G)
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	WEEKS												
	0	1	2	3	4	5	6	7	8	9	10	11	12
GROUP 3 FEMALES - 200.0000 MG/KG													
8702	177.6	201.8	202.0	254.5	278.3	284.4	309.0	313.3	331.2	341.8	344.7	355.3	356.9
8703	187.6	209.3	234.1	256.7	273.3	264.5	278.6	298.1	305.1	325.9	326.3	335.0	342.9
8704	182.4	203.5	233.8	259.8	273.3	275.6	290.8	307.2	309.3	325.2	328.7	334.5	340.8
8705	176.0	*	*	*	*	*	*	*	*	*	*	*	*
8706	168.3	179.9	211.8	223.8	246.8	248.0	268.5	273.2	273.2	332.9	335.3	345.5	342.4
8707	180.4	212.9	231.1	245.4	265.8	277.0	286.1	317.1	336.7	332.9	335.3	345.5	342.4
8708	178.6	196.6	224.1	233.8	243.5	262.8	282.0	288.1	300.6	312.3	312.9	317.6	319.8
8709	170.7	194.3	218.2	251.4	236.0	246.4	242.1	260.1	260.7	272.4	267.7	278.8	274.9
8710	144.9	178.6	210.9	226.8	246.2	258.5	269.9	282.6	290.3	298.5	300.4	316.2	314.2
8711	182.5	203.2	219.8	238.0	249.5	246.8	267.2	273.2	266.3	292.7	306.0	303.6	296.8
8712	177.6	201.2	221.5	250.1	262.4	262.4	280.9	290.7	288.5	295.9	302.5	303.4	312.8
8713	187.6	163.9	227.0	237.6	258.8	276.5	290.0	298.1	310.1	318.5	327.0	321.2	330.7
8714	185.9	211.3	242.2	262.7	270.7	276.8	294.0	305.4	314.0	316.4	326.5	338.5	336.4
8715	179.6	214.5	236.9	262.4	268.1	291.9	305.7	306.6	312.1	325.9	327.3	329.6	333.7
8716	174.8	184.1	217.7	225.3	240.6	245.1	242.4	267.9	268.0	281.5	286.3	285.5	293.2
8717	180.7	203.1	225.0	249.2	263.6	271.6	286.9	304.1	311.6	313.3	322.9	334.8	334.4
8718	182.4	201.3	218.9	234.6	261.6	279.3	298.2	300.8	314.2	320.5	329.2	330.9	348.3
8719	167.7	186.1	207.1	228.7	240.0	249.6	257.6	273.6	275.4	275.1	277.0	285.5	289.1
8720	159.8	177.1	206.3	219.0	234.6	245.5	252.0	266.8	271.7	275.9	272.8	286.0	287.1
8721	170.0	204.1	224.4	251.5	268.4	285.6	292.4	295.8	309.1	312.2	317.1	327.5	327.6
GROUP 4 FEMALES - 800.0000 MG/KG													
8742	183.6	217.4	250.2	273.4	291.5	293.7	294.3	306.1	314.1	320.8	316.0	321.0	325.7
8743	172.6	199.0	207.1	223.1	213.8	245.1	255.4	*	*	*	*	*	*
8744	177.2	197.1	215.2	234.6	244.3	251.0	263.4	275.2	279.0	291.1	297.8	302.7	305.7
8745	192.1	220.8	240.8	270.7	296.2	299.6	*	*	*	*	*	*	*
8746	160.5	183.8	189.5	209.6	216.3	233.6	247.9	248.2	260.3	258.1	263.2	268.5	277.7
8747	171.6	194.0	214.6	236.5	243.9	258.0	271.2	295.8	292.5	306.6	318.3	319.5	330.2
8748	174.1	195.5	207.1	228.0	235.6	246.2	263.1	262.8	272.4	272.0	274.0	279.7	276.1
8749	176.8	205.9	221.1	226.7	252.1	260.3	274.3	280.1	289.8	301.4	293.7	310.4	315.1
8750	181.4	200.7	224.0	234.7	247.4	244.8	271.5	280.6	274.1	286.3	295.3	291.6	286.8
8751	177.4	196.4	225.4	238.9	253.9	265.4	271.5	285.4	286.2	295.2	290.4	301.8	293.9
8752	175.2	185.6	208.9	222.6	241.7	248.7	262.1	266.1	272.3	282.7	280.2	288.2	296.4
8753	177.2	195.5	214.8	222.5	237.5	245.3	258.9	257.4	265.8	250.6	280.0	285.2	281.8
8754	172.2	*	*	*	*	*	*	*	*	*	*	*	*
8755	164.1	173.3	207.5	224.9	250.4	263.7	261.2	275.0	280.3	286.8	293.1	294.2	302.2
8756	177.3	199.7	225.6	246.2	262.5	261.0	269.1	280.8	300.9	296.9	300.8	304.9	319.1
8757	170.7	186.9	215.2	225.3	240.9	246.9	255.8	268.9	271.5	273.7	276.2	280.6	285.8
8758	180.7	184.8	212.1	226.3	236.3	251.5	257.2	267.5	279.5	277.6	305.3	296.0	299.8
8759	177.3	203.2	227.6	228.8	258.1	271.8	277.8	301.0	298.7	313.3	319.2	322.5	326.5
8760	175.0	180.4	205.9	221.8	239.9	251.7	248.7	256.7	254.3	274.2	278.1	277.5	287.7
8761	170.5	183.4	206.6	220.7	226.6	248.1	261.1	261.9	267.9	276.5	279.0	288.0	284.2

* = DEAD ANIMAL



HAZLETON

LABORATORIES AMERICA, INC.
1330 - B PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

HLA 2399-110

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APPENDIX 4

Individual Food Consumption

APPENDIX 4
INDIVIDUAL FOOD CONSUMPTION (G/WK)
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13
GROUP	1 MALES	- CONTROL					WEEKS						
8602	174.2	178.0	168.5	169.5	**	186.2	172.4	144.8	161.0	165.0	151.7	161.2	131.8
8603	168.5	162.5	154.3	160.8	**	168.8	187.0	180.5	172.4	163.2	158.8	170.5	**
8604	174.4	177.3	166.5	171.7	**	196.5	198.7	179.1	176.2	176.6	167.0	183.1	137.5
8605	158.4	187.7	176.6	162.5	**	182.4	172.2	182.7	181.1	168.6	173.8	175.5	87.3
8606	182.7	166.4	156.1	149.1	**	161.4	152.6	147.3	152.4	152.0	138.1	132.9	130.6
8607	174.5	166.2	171.3	159.0	**	159.4	154.6	148.5	152.0	145.7	151.1	154.1	128.9
8608	179.7	175.2	171.1	163.3	**	171.5	120.0	176.6	161.6	157.9	156.8	157.6	126.1
8609	186.8	180.0	166.6	174.0	**	174.4	168.6	164.5	174.7	176.0	168.5	180.2	133.8
8610	172.4	170.0	155.4	154.1	**	153.9	139.9	148.1	153.0	155.7	153.7	157.6	130.2
8611	190.5	175.4	177.8	184.8	**	196.9	200.9	210.8	194.2	191.1	195.2	198.8	162.1
8612	194.5	182.7	180.1	179.7	**	174.6	166.4	162.7	168.1	161.3	163.6	176.5	165.6
8613	169.6	172.8	162.6	179.7	166.1	220.0	**	165.2	169.2	163.2	160.4	178.3	161.0
8614	185.7	184.6	166.3	172.4	166.9	176.0	180.2	171.9	162.6	158.8	155.2	173.5	160.0
8615	174.8	149.2	142.2	147.3	146.9	149.0	145.7	137.7	154.3	147.1	159.7	**	154.2
8616	192.9	186.8	180.8	184.3	176.9	179.1	173.2	183.9	173.9	171.7	170.8	172.4	160.8
8617	188.1	175.4	191.0	193.0	190.9	198.2	190.8	194.2	187.3	192.2	185.0	199.5	177.5
8618	186.9	170.3	160.9	162.8	160.4	169.5	155.7	157.9	156.5	161.4	163.8	171.2	156.5
8619	189.9	161.3	154.2	144.9	143.2	149.3	145.4	156.9	151.9	149.0	152.2	153.8	150.7
8620	184.5	183.9	168.2	180.8	186.1	190.0	188.7	188.9	190.8	190.6	196.8	182.0	184.5
8621	203.4	195.0	193.9	205.2	207.5	207.4	209.1	205.8	208.3	197.8	200.5	204.6	187.4
GROUP	2 MALES	-	100.0000 MG/KG										
8642	194.0	198.1	197.3	193.3	**	157.7	169.0	176.7	176.5	173.2	170.6	165.5	143.5
8643	168.8	164.8	156.3	153.5	**	164.2	167.0	154.9	146.8	156.4	156.8	146.9	142.0
8644	194.3	187.4	186.7	182.3	**	175.4	178.7	174.3	174.0	171.0	182.2	173.9	155.2
8645	186.8	181.0	179.7	109.5	**	171.1	157.3	163.7	156.9	150.6	165.6	169.5	147.4
8646	196.9	191.3	188.1	190.3	**	183.1	181.0	166.9	163.9	164.9	149.4	149.1	131.9
8647	206.6	205.0	199.7	**	**	**	194.7	177.4	184.8	187.7	184.2	187.8	169.6
8648	200.5	210.3	222.0	209.7	**	**	214.1	204.4	199.1	197.4	172.5	157.8	109.5
8649	197.1	197.7	182.1	182.2	**	187.6	189.7	202.3	186.3	166.7	178.9	184.6	175.7
8650	209.6	191.6	175.8	169.3	**	166.7	162.4	163.1	163.1	166.7	157.2	165.8	150.7
8651	187.9	187.0	187.8	185.0	**	188.7	190.7	184.0	178.0	179.0	183.4	172.1	158.5
8652	171.1	164.4	150.8	151.6	156.0	156.5	146.5	**	152.5	136.1	138.5	160.0	176.0
8653	188.1	193.3	177.0	174.9	176.5	180.5	180.8	196.9	184.0	184.9	191.8	184.7	176.8
8654	179.8	171.6	178.8	187.4	189.8	186.3	**	171.0	179.0	179.4	170.8	161.9	**
8655	214.3	**	**	166.8	151.7	150.4	150.2	140.8	138.9	145.4	138.8	140.8	144.6
8656	204.4	196.1	191.6	205.0	213.6	202.5	197.4	178.5	186.6	190.7	177.6	196.0	190.0
8657	179.4	171.1	168.6	173.2	179.8	173.7	168.1	166.2	158.3	170.2	171.1	161.8	*
8658	203.7	204.9	186.7	183.2	185.1	183.5	178.9	169.4	166.6	174.2	168.1	161.3	161.3
8659	202.8	191.9	199.4	183.2	177.3	183.5	184.2	188.2	174.0	186.1	168.2	169.7	157.8
8660	185.3	133.9	172.3	175.6	170.5	170.1	178.2	163.5	156.4	170.8	**	167.4	151.3
8661	182.8	176.4	167.9	167.1	161.4	163.5	162.6	159.7	159.4	220.0	166.7	165.2	160.0

* = DEAD ANIMAL

** = INVALID VALUE - FOOD WASTED OR SPILLED

APPENDIX 4 - CONTINUED
INDIVIDUAL FOOD CONSUMPTION (G/WK)
SUBCHRONIC TOXICITY STUDY IN RATS

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ANIMAL NUMBER	GROUP	WEEKS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
	3 MALES - 200.0000 MG/KG													
8682	207.3	185.9	187.1	176.2	**	167.7	164.8	166.7	177.0	174.0	170.4	168.4	149.8	
8683	184.1	182.7	177.1	47.4	**	174.2	162.0	163.1	155.4	157.1	157.7	154.1	127.6	
8684	190.6	186.2	180.0	183.3	**	189.5	**	**	196.8	182.7	183.0	194.8	**	
8685	183.0	208.1	195.7	201.4	**	187.3	191.8	202.8	187.9	203.3	191.3	200.9	166.7	
8686	198.7	185.5	195.9	191.8	**	181.5	186.3	190.5	155.1	154.7	177.6	206.1	149.1	
8687	186.6	177.0	184.3	175.6	**	167.7	155.7	173.3	165.4	167.0	166.2	167.6	161.8	
8688	172.3	173.3	186.0	166.1	**	157.8	152.6	148.3	157.9	168.0	131.7	152.0	147.9	
8689	215.1	204.6	199.8	197.4	**	190.2	196.5	206.0	192.7	200.0	195.2	190.3	167.9	
8690	177.7	158.9	156.8	161.5	**	150.2	145.0	150.3	146.0	149.8	150.9	158.6	131.9	
8691	214.6	216.9	211.8	211.0	**	**	217.5	**	202.1	**	211.7	**	177.6	
8692	199.2	182.7	183.8	161.4	156.7	157.8	163.2	**	105.5	145.7	167.5	170.8	153.0	
8693	200.6	195.0	201.1	193.0	*	*	*	*	*	*	*	*	*	
8694	172.9	165.3	171.4	181.7	*	*	*	*	*	*	*	*	*	
8695	190.0	**	192.9	186.6	180.6	176.8	167.5	170.1	159.9	166.9	161.1	171.8	161.2	
8696	189.2	196.8	194.6	197.5	200.0	192.5	196.6	198.8	180.8	192.6	*	*	*	
8697	189.4	171.0	160.2	158.4	153.8	165.2	155.3	165.3	150.0	166.9	153.9	149.5	140.6	
8698	187.7	180.6	182.7	174.4	173.0	168.7	160.5	159.6	157.5	163.7	157.1	160.5	154.8	
8699	195.8	**	174.0	168.2	170.2	162.7	165.2	164.0	159.3	165.3	168.9	161.2	154.1	
8700	187.4	210.2	**	183.4	174.6	178.3	174.8	175.8	174.6	173.6	171.9	172.0	161.8	
8701	169.6	180.1	187.1	190.3	194.3	182.1	189.9	193.0	186.0	190.0	188.1	190.7	189.5	
	4 MALES - 800.0000 MG/KG													
8722	184.7	185.2	166.7	197.3	**	183.6	206.8	*	*	*	*	*	*	
8723	175.7	187.8	184.4	182.5	**	190.3	184.8	179.1	173.0	183.8	185.1	180.4	142.7	
8724	209.5	189.8	179.4	177.5	**	179.4	171.5	**	170.7	116.6	187.6	203.6	**	
8725	179.4	209.9	**	187.1	*	*	*	*	*	*	*	*	*	
8726	186.8	185.8	182.5	181.5	**	192.8	181.8	175.3	171.6	177.9	175.0	170.4	145.0	
8727	172.6	158.7	150.0	139.6	**	161.1	145.0	148.2	146.4	154.3	150.7	148.4	134.0	
8728	186.2	166.3	182.1	161.9	**	165.6	165.7	153.1	151.4	166.2	**	160.0	130.8	
8729	192.8	190.0	183.7	172.3	*	*	*	*	*	*	*	*	*	
8730	205.6	192.4	190.6	210.7	**	196.1	187.9	184.7	161.3	181.0	174.5	177.9	183.0	
8731	**	210.2	201.4	195.9	**	206.9	198.5	192.5	189.0	183.2	193.4	193.0	172.7	
8732	168.4	169.4	163.8	176.7	163.1	175.8	181.3	178.7	142.3	149.5	179.6	184.0	135.9	
8733	203.0	195.0	190.3	197.3	193.5	191.1	196.3	**	181.2	181.3	**	179.8	152.1	
8734	160.5	196.2	203.8	176.2	180.7	177.9	170.1	172.4	164.9	159.7	167.3	169.7	148.3	
8735	185.3	193.5	197.9	198.7	200.4	209.6	**	**	186.4	201.6	**	183.1	177.8	
8736	120.4	212.3	219.1	218.3	210.3	207.6	205.1	197.1	197.9	146.3	195.7	204.0	200.4	
8737	178.0	185.7	177.6	176.4	182.3	177.4	174.5	168.8	171.9	169.4	171.9	141.6	208.4	
8738	172.5	166.8	164.3	105.2	136.5	149.8	**	155.5	141.1	148.7	138.4	151.2	129.8	
8739	208.7	209.3	180.5	184.3	187.2	191.8	204.1	195.5	186.7	*	*	*	*	
8740	184.9	177.1	180.0	174.3	167.8	169.7	171.3	169.1	163.5	161.3	163.6	150.1	121.6	
8741	196.1	199.3	198.2	209.6	215.0	200.7	207.3	194.8	192.7	196.4	196.7	179.2	184.4	

* = DEAD ANIMAL
** = INVALID VALUE - FOOD WASTED OR SPILLED

APPENDIX 4 - CONTINUED
INDIVIDUAL FOOD CONSUMPTION (G/WK)
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	WEEKS												
	1	2	3	4	5	6	7	8	9	10	11	12	13
GROUP 1 FEMALES - CONTROL													
8622	124.9	115.5	113.1	101.3	**	100.5	99.6	97.3	91.7	101.0	99.7	103.0	93.4
8623	163.4	155.9	146.0	146.5	**	145.4	143.2	137.9	121.8	131.6	125.3	119.4	104.0
8624	169.3	178.3	172.0	167.2	**	157.1	162.9	158.2	152.3	162.3	116.2	177.4	158.5
8625	126.5	121.3	119.3	115.1	**	125.0	133.9	116.9	121.3	112.9	124.8	118.3	98.4
8626	135.3	144.1	130.4	133.0	**	132.8	145.8	143.4	135.6	130.7	126.3	128.2	101.3
8627	**	184.8	123.5	106.3	**	104.6	110.3	98.6	110.0	95.2	95.1	98.3	93.6
8628	161.4	146.7	166.4	151.2	**	155.5	**	153.5	144.4	152.2	138.1	133.0	109.9
8629	169.9	**	**	**	**	151.2	160.7	165.8	155.8	**	199.3	149.1	126.5
8630	131.7	129.5	125.7	122.5	**	121.9	124.3	126.3	115.7	119.7	116.2	113.8	106.1
8631	161.9	171.6	193.7	**	**	153.7	136.6	158.8	129.3	126.0	137.0	141.4	112.9
8632	138.8	129.1	130.6	143.9	110.1	126.9	120.5	125.7	119.4	125.5	108.7	121.6	112.1
8633	**	130.5	130.9	117.7	123.9	128.2	122.2	124.9	123.1	132.5	119.2	120.5	119.6
8634	124.1	127.7	119.5	130.6	128.4	135.2	133.2	137.4	116.5	130.1	140.1	129.3	122.4
8635	153.1	150.6	142.6	169.0	**	144.5	**	137.3	149.3	118.8	131.9	131.3	121.1
8636	138.3	**	142.7	138.4	137.1	145.0	135.7	133.0	133.8	132.1	126.3	127.5	125.6
8637	119.7	117.1	112.1	107.8	117.0	112.2	106.6	115.4	111.2	108.4	110.5	123.0	120.4
8638	137.6	130.7	191.3	**	169.8	160.8	129.0	134.0	122.9	122.9	125.3	117.5	120.9
8639	145.0	139.7	132.3	127.4	133.5	130.8	**	133.8	137.8	162.4	**	127.7	121.6
8640	137.8	144.8	140.6	156.1	143.1	143.7	128.0	137.6	131.9	137.2	**	127.0	125.5
8641	132.8	137.6	129.4	134.8	141.3	**	127.2	129.3	132.3	125.3	120.1	127.7	120.0
GROUP 2 FEMALES - 100.0000 MG/KG													
8662	126.3	123.6	117.7	111.3	**	113.9	121.0	112.5	108.9	107.1	105.9	105.4	94.6
8663	147.3	**	156.0	158.5	**	132.7	151.4	**	**	**	*	*	*
8664	152.0	150.0	148.0	140.0	**	134.0	150.6	139.1	135.8	147.6	131.2	129.0	121.6
8665	146.9	143.9	161.9	150.8	**	132.7	144.9	**	120.9	124.7	119.3	127.6	109.3
8666	**	159.7	119.0	145.8	**	131.9	155.3	126.4	116.2	115.5	126.6	108.6	115.6
8667	**	**	**	**	**	**	**	184.8	118.7	119.1	151.3	132.3	**
8668	138.1	148.8	168.2	131.2	**	109.3	213.5	163.1	140.9	133.2	122.9	132.5	114.8
8669	148.1	**	202.2	**	**	**	**	**	**	165.6	**	**	**
8670	**	**	155.3	192.6	**	**	174.3	**	**	167.9	164.9	**	**
8671	146.9	**	174.1	145.1	**	135.2	**	139.6	132.4	139.5	127.6	118.1	166.5
8672	166.1	159.7	143.9	144.2	134.2	127.3	135.0	124.3	126.7	131.6	125.7	126.3	112.0
8673	144.1	152.0	156.2	160.8	149.1	127.1	149.3	180.3	**	**	**	**	**
8674	122.1	120.7	117.2	125.4	113.1	123.4	126.2	114.5	124.3	107.3	122.2	112.4	119.8
8675	166.4	**	184.5	150.9	**	124.4	**	**	155.1	195.3	**	**	*
8676	138.9	136.0	136.1	133.2	132.6	130.1	134.8	128.2	123.5	126.7	117.4	127.2	112.2
8677	150.2	135.9	139.0	131.5	124.7	115.0	127.1	132.4	104.0	106.3	*	*	*
8678	124.8	118.8	110.4	108.2	102.8	102.7	105.4	**	101.2	102.1	99.3	104.4	97.8
8679	176.9	176.4	154.9	156.9	152.0	128.5	90.5	117.2	101.1	**	98.2	108.2	116.7
8680	178.2	**	196.8	163.5	147.4	136.8	144.5	**	140.8	142.9	160.6	143.7	132.3
8681	**	150.0	157.0	153.7	135.1	136.2	140.2	135.6	128.3	121.2	121.9	124.4	125.2

* = DEAD ANIMAL
** = INVALID VALUE - FOOD WASTED OR SPILLED

ANIMAL NUMBER	WEEKS												
	1	2	3	4	5	6	7	8	9	10	11	12	13
GROUP 3 FEMALES - 200.0000 MG/KG													
8702	155.2	**	166.6	158.1	**	158.4	152.1	178.5	148.4	138.2	154.7	142.1	119.5
8703	151.0	136.5	142.2	139.9	**	107.5	129.5	143.2	138.5	138.0	134.9	128.3	114.2
8704	149.9	156.6	151.0	136.4	**	146.2	146.0	154.7	142.5	177.7	139.4	142.9	**
8705	*	*	*	*	*	*	*	*	*	*	*	*	*
8706	132.4	134.3	124.4	126.8	**	130.8	114.2	*	*	*	*	*	*
8707	139.0	144.3	124.9	127.5	**	130.7	158.0	163.2	129.6	116.9	125.2	118.6	105.5
8708	144.5	146.0	**	**	**	136.0	146.0	135.2	127.1	128.8	123.3	128.4	115.8
8709	127.8	133.0	159.6	**	**	107.2	**	**	156.7	106.0	**	101.4	103.5
8710	148.8	140.9	133.3	142.2	**	134.5	147.7	131.8	126.5	123.3	132.3	128.8	117.8
8711	157.1	146.5	**	142.9	**	**	145.4	132.8	141.4	139.9	135.3	135.3	108.3
8712	155.1	157.2	170.1	145.5	**	144.2	146.8	127.8	130.3	137.9	128.2	132.2	115.8
8713	**	152.7	**	158.1	139.0	139.7	138.0	139.9	129.6	130.1	125.2	128.8	111.0
8714	154.6	157.1	175.1	166.5	**	136.1	**	**	128.2	127.9	120.1	124.1	145.0
8715	**	147.5	167.1	146.8	143.1	137.9	130.0	127.6	130.7	131.0	133.0	135.4	125.2
8716	153.6	150.8	131.4	131.9	129.0	131.8	134.4	133.8	123.8	121.7	128.9	116.4	137.6
8717	148.0	144.6	147.3	135.6	133.7	137.0	143.6	133.8	133.3	132.4	129.9	123.7	126.1
8718	**	165.2	218.0	**	181.5	189.5	210.9	**	**	180.6	147.6	167.4	**
8719	161.9	**	203.7	**	**	136.7	141.7	**	**	123.1	124.9	114.8	124.9
8720	130.6	137.9	132.0	134.1	121.3	127.6	**	**	119.1	124.6	134.3	121.3	132.8
8721	184.5	150.7	154.6	179.6	152.9	157.0	141.9	147.6	132.9	138.5	134.2	130.4	140.3
GROUP 4 FEMALES - 800.0000 MG/KG													
8742	188.3	157.9	153.1	170.7	**	168.2	153.8	156.6	**	170.3	145.8	142.8	**
8743	190.0	159.1	165.7	174.5	**	149.1	*	*	*	*	*	*	*
8744	156.5	157.3	143.5	**	**	**	146.8	145.1	136.7	143.0	**	139.3	**
8745	171.5	163.5	168.4	180.8	**	**	*	*	*	*	*	*	*
8746	133.3	119.6	174.5	155.3	**	129.8	129.1	138.4	116.4	146.4	169.3	149.9	119.2
8747	132.6	145.0	152.3	154.3	**	136.3	156.9	142.3	133.8	144.2	131.2	145.6	133.1
8748	122.0	102.8	95.4	105.1	**	116.9	111.7	109.5	102.7	96.0	106.3	87.8	**
8749	158.5	140.5	183.0	147.9	**	137.9	144.9	137.5	128.1	128.1	143.8	140.2	101.3
8750	158.6	**	**	**	**	**	**	**	**	202.2	**	**	220.0
8751	143.5	149.1	141.2	138.4	**	127.9	161.9	127.7	129.8	209.9	139.9	118.6	**
8752	134.2	128.1	121.1	**	125.0	125.0	128.4	**	122.5	121.2	118.5	125.2	88.3
8753	153.0	151.0	141.8	165.5	**	**	**	**	**	157.7	144.4	144.0	131.8
8754	*	*	*	*	*	*	*	*	*	*	*	*	*
8755	130.1	141.2	163.2	170.3	179.2	154.9	152.9	147.2	147.8	150.2	153.9	144.4	124.5
8756	**	161.7	181.2	168.2	147.8	137.1	194.0	154.0	**	143.5	100.3	169.2	60.8
8757	160.4	177.4	206.4	**	**	158.0	197.1	**	**	178.0	200.8	**	167.4
8758	142.5	**	174.4	168.0	**	**	**	**	**	171.0	146.7	**	129.1
8759	139.0	143.9	131.3	143.3	145.2	138.1	178.1	148.4	141.1	138.4	141.0	150.7	141.0
8760	130.3	138.3	133.5	164.2	**	147.8	**	204.1	**	138.9	**	157.7	128.5
8761	132.6	129.4	122.8	131.8	197.0	133.8	128.8	124.7	129.3	126.4	141.8	122.1	131.0

* - DEAD ANIMAL
** - INVALID VALUE - FOOD WASTED OR SPILLED



HAZLETON

LABORATORIES AMERICA, INC.

1330 - 8 PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

HLA 2399-110

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APPENDIX 5

Individual Ophthalmoscopic Findings



APPENDIX 5
INDIVIDUAL OPHTHALMOSCOPIC FINDINGS

<u>Animal Number</u>	<u>Group</u>	<u>Sex</u>	<u>Interval</u>	<u>Finding</u>
8673	2	F	Pretest	Left eye - persistent hyaloid artery remnant with vitreal bleed. ^a
8738	4	M	Pretest	Left eye - persistent hyaloid remnant with vitreal bleed. ^a
			Terminal	No visible lesions

^aJudged by ophthalmologist to be a normal developmental change which resolves with age.



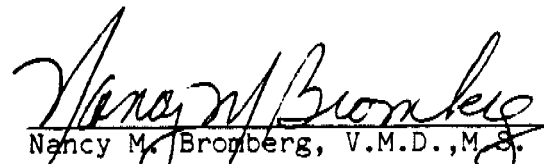
Nancy M. Bromberg, V.M.D., M.S.
Diplomate, American College of Veterinary Ophthalmologists
4105 Brandywine Street, Northwest
Washington, D.C. 20016
202/363-7303

August 11, 1986

Mr. Patrick Vanatta
Hazleton Laboratories
1330-B Piccard Dr.
Rockville, MD 20850

Subject: Ophthalmoscopic examinations of rats, Project No. 2399-110
July 14, 1986

All animals examined had no visible lesions.


Nancy M. Bromberg, V.M.D., M.S.
Dip., A.C.V.O.



Nancy M. Bromberg, V.M.D., M.S.
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April 29, 1986

M. Rodwin, study coordinator
Hazleton Laboratories
1330- B Piccard Drive
Rockville, MD 20850


Subject: Ophthalmoscopic examination of 100 SD rats,
Study 2399-110, April 11, 1986

All animals were found to have no visible lesions with the exception of:

Group II female #8673 - left eye had a persistent hyaloid artery remenant with vitreal bleed

Group IV male # 8738 - left eye had a persistent hyaloid remnant with vitreal bleed

These findings represent a normal developmental change which resolves with age.


Nancy M. Bromberg, V.M.D., M.S.



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APPENDIX 6

Individual Clinical Hematology Values



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2399-110

KEY TO HEMATOLOGY

R = Repeat Sample

LEUKOCYTE DIFFERENTIALS

Blast Cells	BLAST
Metamyelocytes	META
Band Neutrophils	BAND
Segmented Neutrophils	SEG
Lymphocytes	LYMPH
Monocytes	MONO
Eosinophils	EOSIN
Basophils	BASO

CELL MORPHOLOGY

Echinocytes	ECHINO
Target Cells	TARGET
Poikilocytes	POIK
Acanthocytes	ACANTH
Polychromatophilic Cells	POLY
Nucleated RBC's ^a	NRRC
Howell-Jolly Bodies	HJBODY

Cell morphology findings are graded by the following method.

- = None Present
- T = Trace Numbers Present
- 1 = Slight Numbers Present
- 2 = Moderate Numbers Present
- 3 = Marked Numbers Present
- 4 = Severe Numbers Present

^aExpressed as a percentage of 100 WBC's counted.

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WEEK: -01

MALES

RAT

S2399110

APPENDIX 6
INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	RBC M1/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC M1/UL
GROUP: 5	DOSE LEVEL: BASELINE					
	DOSAGE UNIT:					
08762	6.72	14.5	45.6	1127	5.6	.38
08763	6.28	13.9	40.4	1198	5.0	.31
08764	7.30	15.6	50.4	1132	6.6	.48
08765	6.96	14.3	45.2	1144	7.0	.49
08766	6.69	14.2	43.5	1231	4.6	.31
MEAN	6.79	14.5	45.0	1166	5.8	.39
S.D.	.375	.65	3.64	45.9	1.02	.088

S2399110 RAT MALES WEEK: -01 PAGE: 1

APPENDIX 6
INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	WBC TH/UL	BLAST TH/UL (%)	MET TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 5	DOSE LEVEL: BASELINE DOSAGE UNIT:								
08762	9.0	.0(0)	.0(0)	.0(0)	1.4(16)	7.3(81)	.3(3)	.0(0)	.0(0)
08763	10.8	.0(0)	.0(0)	.0(0)	2.4(22)	8.2(76)	.2(2)	.0(0)	.0(0)
08764	9.3	.0(0)	.0(0)	.0(0)	.7(8)	8.6(92)	.0(0)	.0(0)	.0(0)
08765	6.4	.0(0)	.0(0)	.0(0)	.9(14)	5.5(86)	.0(0)	.0(0)	.0(0)
08766	12.1	.0(0)	.0(0)	.0(0)	1.1(9)	11.0(91)	.0(0)	.0(0)	.0(0)
MEAN	9.5	.0	.0	.0	1.3	8.1	.1	.0	.0
S.D.	2.14	.00	.00	.00	.67	2.00	.14	.00	.00

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WEEK: -01

MALES

RAT

S2399110

APPENDIX 6
INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	POLY	TARGET	ECHINO
08762	2+	-	1+
08763	2+	-	2+
08764	2+	-	1+
08765	2+	-	T
08766	1+	-	2+

GROUP: 5 DOSE LEVEL: BASELINE DOSAGE UNIT:

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WEEK: 005

MALES

RAY

S2399110

APPENDIX 6

INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	RBC MI/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC MI/UL
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GROUP: 1 DOSE LEVEL: 0 DOSAGE UNIT: MG/KG

08602	7.68	14.7	47.1	1144	4.2	.32
08603	6.53	15.2	38.9	1050	4.8	.31
08604	8.32	15.3	48.6	1118	1.4	.12
08605	7.57	14.7	41.8	1068	2.0	.15
08606 R	7.46	14.9	41.9	1214	3.5	.26
08607 R	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED
08608	7.45	15.5	44.3	1112	1.6	.12
08609	7.99	16.9	48.1	1411	2.2	.18
08610	8.85	17.4	48.4	1146	2.2	.19
08611	7.73	14.8	43.7	738	.6	.05
MEAN	7.73	15.5	44.8	1110	2.5	.19
S.D.	.641	.99	3.49	178.1	1.38	.092

GROUP: 2 DOSE LEVEL: 100 DOSAGE UNIT: MG/KG

08642	7.84	15.4	47.2	1217	2.4	.19
08643	8.74	16.5	50.3	1243	2.1	.18
08644	8.14	15.6	47.5	1253	1.3	.11
08645	6.67	13.7	37.7	702	1.4	.09
08646	8.52	17.4	48.4	1098	1.5	.13
08647	6.59	14.5	39.8	1172	2.8	.18
08648 R	5.99	14.2	36.9	1546	10.3	.62
08649	8.32	16.6	48.5	1113	1.8	.15
08650	8.04	16.3	47.5	1008	1.8	.14
08651	7.62	15.6	45.9	940	2.1	.16
MEAN	7.65	15.6	45.0	1129	2.7	.19
S.D.	.923	1.17	4.90	222.6	2.69	.153

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WEEK: 005

MALES

RAT

S2399110

APPENDIX 6

INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	RBC MI/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC MI/UL
------------------	--------------	-------------	----------	-------------------	----------------	------------------

GROUP: 3 DOSE LEVEL: 200 DOSAGE UNIT: MG/KG

08682	8.19	15.9	48.7	1082	.6	.05
08683	9.03	16.9	53.3	944	.2	.02
08684	6.67	12.8	39.9	948	4.2	.28
08685	7.78	15.2	45.1	1188	1.3	.10
08686	7.67	15.9	46.1	1138	1.5	.12
08687	8.00	16.3	48.0	1297	1.1	.09
08688	7.49	15.1	43.4	1245	2.1	.16
08689	7.68	15.3	44.8	1350	2.5	.19
08690	9.17	17.7	52.1	1157	1.4	.13
08691	8.08	16.6	48.0	1178	4.0	.32
MEAN	7.98	15.8	46.9	1153	1.9	.15
S.D.	.727	1.33	3.99	133.7	1.34	.095

GROUP: 4 DOSE LEVEL: 800 DOSAGE UNIT: MG/KG

08722	8.69	16.7	50.7	1023	1.0	.09
08723	7.97	16.8	47.5	1116	2.0	.16
08724	7.95	15.5	47.5	748	1.4	.11
08725	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED
08726 R	6.08	14.3	35.8	1279	7.0	.43
08727 R	7.47	14.9	41.9	1576	6.5	.49
08728	7.81	17.1	43.4	1349	1.1	.09
08729	8.15	15.6	46.4	1229	1.8	.15
08730	6.72	15.8	40.6	1252	4.5	.30
08731	8.78	16.3	49.3	824	1.9	.17
MEAN	7.74	15.9	44.8	1155	3.0	.22
S.D.	.875	.93	4.76	259.6	2.35	.150

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ANIMAL NUMBER	WBC TH/UL	BLAST TH/UL (%)	MET TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 1 DOSE LEVEL: 0 DOSAGE UNIT: MG/KG									
08602	15.9	.0(0)	.0(0)	.0(0)	1.6(10)	14.2(89)	.2(1)	.0(0)	.0(0)
08603	18.6	.0(0)	.0(0)	.0(0)	6.1(33)	11.7(63)	.7(4)	.0(0)	.0(0)
08604	15.5	.0(0)	.0(0)	.0(0)	1.5(10)	13.5(87)	.5(3)	.0(0)	.0(0)
08605	13.7	.0(0)	.0(0)	.0(0)	5.9(43)	7.3(53)	.5(4)	.0(0)	.0(0)
08606 R	12.6	.0(0)	.0(0)	.0(0)	1.4(11)	11.2(89)	.0(0)	.0(0)	.0(0)
08607 R	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED
08608	10.6	.0(0)	.0(0)	.0(0)	2.4(23)	8.0(75)	.1(1)	.1(1)	.0(0)
08609	16.0	.0(0)	.0(0)	.0(0)	.3(2)	15.2(95)	.3(2)	.2(1)	.0(0)
08610	13.5	.0(0)	.0(0)	.0(0)	1.9(14)	11.6(86)	.0(0)	.0(0)	.0(0)
08611	10.7	.0(0)	.0(0)	.0(0)	1.5(14)	9.1(85)	.0(0)	.1(1)	.0(0)
MEAN	14.1	.0	.0	.0	2.5	11.3	.3	.0	.0
S.D.	2.64	.00	.00	.00	2.05	2.75	.26	.07	.00
GROUP: 2 DOSE LEVEL: 100 DOSAGE UNIT: MG/KG									
08642	22.4	.0(0)	.0(0)	.0(0)	5.4(24)	16.1(72)	.4(2)	.4(2)	.0(0)
08643	21.4	.0(0)	.0(0)	.0(0)	5.1(24)	16.1(75)	.2(1)	.0(0)	.0(0)
08644	15.2	.0(0)	.0(0)	.0(0)	1.1(7)	13.8(91)	.2(1)	.2(1)	.0(0)
08645	10.1	.0(0)	.0(0)	.0(0)	1.3(13)	8.7(86)	.0(0)	.1(1)	.0(0)
08646	15.4	.0(0)	.0(0)	.0(0)	1.4(9)	13.9(90)	.0(0)	.2(1)	.0(0)
08647	14.9	.0(0)	.0(0)	.0(0)	1.0(7)	13.7(92)	.1(1)	.0(0)	.0(0)
08648 R	20.6	.0(0)	.0(0)	.0(0)	1.0(5)	19.2(93)	.0(0)	.4(2)	.0(0)
08649	21.2	.0(0)	.0(0)	.0(0)	3.8(18)	17.2(81)	.0(0)	.2(1)	.0(0)
08650	15.4	.0(0)	.0(0)	.0(0)	2.2(14)	13.2(86)	.0(0)	.0(0)	.0(0)
08651	14.6	.0(0)	.0(0)	.0(0)	1.5(10)	12.8(88)	.1(1)	.1(1)	.0(0)
MEAN	17.1	.0	.0	.0	2.4	14.5	.1	.2	.0
S.D.	4.02	.00	.00	.00	1.73	2.87	.13	.15	.00

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ANIMAL NUMBER	WBC TH/UL	BLAST TH/UL (%)	MET TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 3	DOSE LEVEL: 200								
	DOSAGE UNIT: MG/KG								
08682	11.8	.0(0)	.0(0)	.0(0)	1.8(15)	9.4(88)	.2(2)	.4(3)	.0(0)
08683	16.0	.0(0)	.0(0)	.0(0)	1.3(8)	14.4(90)	.0(0)	.3(2)	.0(0)
08684	9.3	.0(0)	.0(0)	.0(0)	2.2(24)	6.8(73)	.2(2)	.1(1)	.0(0)
08685	16.0	.0(0)	.0(0)	.0(0)	1.6(10)	14.4(90)	.0(0)	.0(0)	.0(0)
08686	11.7	.0(0)	.0(0)	.0(0)	2.5(21)	9.1(78)	.1(1)	.0(0)	.0(0)
08687	18.2	.0(0)	.0(0)	.0(0)	1.3(7)	16.4(90)	.4(2)	.2(1)	.0(0)
08688	16.0	.0(0)	.0(0)	.0(0)	1.9(12)	13.8(86)	.2(1)	.2(1)	.0(0)
08689	13.4	.0(0)	.0(0)	.0(0)	.8(6)	12.5(93)	.0(0)	.1(1)	.0(0)
08690	14.8	.0(0)	.0(0)	.0(0)	2.5(17)	12.0(81)	.1(1)	.1(1)	.0(0)
08691	15.9	.0(0)	.0(0)	.0(0)	1.6(10)	14.3(90)	.0(0)	.0(0)	.0(0)
MEAN	14.3	.0	.0	.0	1.7	12.3	.1	.1	.0
S.D.	2.70	.00	.00	.00	.55	3.00	.13	.13	.00
GROUP: 4	DOSE LEVEL: 800								
	DOSAGE UNIT: MG/KG								
08722	21.1	.0(0)	.0(0)	.0(0)	3.2(15)	17.5(83)	.4(2)	.0(0)	.0(0)
08723	15.5	.0(0)	.0(0)	.0(0)	.8(5)	14.7(95)	.0(0)	.0(0)	.0(0)
08724	7.9	.0(0)	.0(0)	.0(0)	1.6(20)	6.2(79)	.1(1)	.0(0)	.0(0)
08725	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED
08726 R	23.3	.0(0)	.0(0)	.0(0)	5.4(23)	17.2(74)	.7(3)	.0(0)	.0(0)
08727 R	17.0	.0(0)	.0(0)	.0(0)	3.9(23)	12.9(76)	.0(0)	.2(1)	.0(0)
08728	13.3	.0(0)	.0(0)	.0(0)	3.1(23)	10.2(77)	.0(0)	.0(0)	.0(0)
08729	17.4	.0(0)	.0(0)	.0(0)	3.3(19)	13.6(78)	.0(0)	.5(3)	.0(0)
08730	20.3	.0(0)	.0(0)	.0(0)	2.8(14)	17.1(84)	.0(0)	.4(2)	.0(0)
08731	16.4	.0(0)	.0(0)	.0(0)	1.6(10)	14.4(88)	.2(1)	.2(1)	.0(0)
MEAN	16.9	.0	.0	.0	2.9	13.8	.2	.1	.0
S.D.	4.56	.00	.00	.00	1.38	3.69	.25	.19	.00

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ANIMAL NUMBER	POLY	TARGET	ECCHIN	ACANTH	POIK	HGBODY	NRBC
GROUP: 1 DOSE LEVEL: 0 DOSAGE UNIT: MG/KG							
08602	T	-	3+	-	-	-	-
08603	T	-	3+	1+	-	-	-
08604	T	-	-	-	-	-	-
08605	T	-	3+	-	-	-	-
08606 R	1+	-	4+	T	-	-	-
08607 R	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED
08608	T	-	3+	T	-	-	-
08609	T	-	4+	-	-	-	-
08610	T	-	4+	-	-	-	-
08611	T	-	3+	-	-	-	-
GROUP: 2 DOSE LEVEL: 100 DOSAGE UNIT: MG/KG							
08642	1+	-	2+	-	-	-	-
08643	T	-	3+	-	T	-	-
08644	T	-	4+	-	FEW	-	-
08645	T	-	3+	-	-	-	-
08646	T	-	3+	-	-	-	-
08647	T	-	4+	-	-	-	-
08648 R	1+	-	3+	-	-	-	-
08649	T	-	2+	-	-	-	-
08650	T	-	3+	-	-	-	-
08651	T	-	3+	-	-	-	-
GROUP: 3 DOSE LEVEL: 200 DOSAGE UNIT: MG/KG							
08682	T	-	3+	-	-	-	-
08683	T	-	T	-	-	-	-
08684	T	-	T	-	-	-	-
08685	T	-	3+	-	-	-	-
08686	T	-	3+	-	-	-	-
08687	T	-	3+	-	-	-	-
08688	1+	T	3+	-	-	-	-
08689	T	-	1+	-	-	-	-
08690	T	-	3+	-	-	-	-
08691	T	-	2+	-	-	-	-

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ANIMAL NUMBER	POLY	TARGET	ECHINO	ACANTH	POIK	HJBODY	NRBC

GROUP: 4	DOSE LEVEL: 800		DOSAGE UNIT: MG/KG				
08722	T	-	3+	-	-	-	-
08723	T	-	3+	-	-	FEW	-
08724	T	-	2+	-	-	-	-
08725	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED	CLOTTED
08726 R	1+	-	4+	-	-	-	-
08727 R	T	-	2+	-	-	-	-
08728	1+	-	4+	-	-	-	-
08729	T	-	3+	-	-	-	-
08730	T	-	3+	-	-	-	-
08731	1+	-	1+	-	-	-	-

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	RBC ML/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC ML/UL
GROUP: 1	DOSE LEVEL: 0	DOSAGE UNIT: MG/KG				
006002	8.56	16.9	47.2	960	1.1	.09
006003	7.77	15.0	41.3	943	3.0	.23
006004	8.51	15.3	44.0	1007	.9	.08
006005	8.75	15.6	42.6	965	.6	.05
006006	8.29	14.9	42.1	1093	1.2	.10
006007	8.71	15.6	43.6	1401	2.2	.19
006008	8.23	15.3	43.8	926	.7	.06
006009	8.06	15.2	43.4	1236	1.3	.10
006010	9.16	16.6	46.2	1081	1.3	.12
006011	8.82	15.8	44.8	1232	1.2	.11
MEAN	8.49	15.6	43.9	946	1.3	.11
S.D.	.407	.66	1.80	346.3	.73	.056
GROUP: 2	DOSE LEVEL: 100	DOSAGE UNIT: MG/KG				
006402	8.33	15.7	42.4	984	.9	.07
006403	8.14	14.8	42.0	1182	1.2	.10
006404	8.32	14.8	42.5	1159	1.1	.09
006405	8.61	15.7	44.5	1196	.9	.08
006406	9.17	17.5	49.1	846	1.1	.10
006407	7.96	15.1	42.5	1112	.4	.03
006408	6.54	13.3	37.1	1467	.9	.06
006409	8.60	15.9	45.4	1004	2.4	.21
006410	8.54	15.9	45.2	920	2.1	.18
006411	7.92	14.8	42.8	1005	1.9	.15
MEAN	8.21	15.3	43.3	1088	1.3	.11
S.D.	.692	1.09	3.08	176.8	.63	.056

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ANIMAL NUMBER	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC M/UL
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GROUP: 3 DOSE LEVEL: 200 DOSAGE UNIT: MG/KG

08682	16.0	44.2	1044	1.2	.10
08683	15.5	44.8	1158	1.0	.08
08684	15.7	44.8	1095	1.3	.11
08685	14.6	41.9	1195	2.9	.24
08686	15.4	44.4	1140	1.0	.08
08687	15.8	45.3	1231	2.1	.18
08688	14.3	41.7	1136	2.1	.17
08689	15.6	44.0	1261	2.0	.17
08690	15.8	44.6	1093	.8	.07
08691	17.0	47.2	1056	.8	.07
MEAN	15.6	44.3	1141	1.5	.13
S.D.	.74	1.59	72.1	.71	.059

GROUP: 4 DOSE LEVEL: 800 DOSAGE UNIT: MG/KG

08723	16.6	44.7	1063	3.0	.26
08724	15.9	45.0	832	1.2	.10
08726	15.5	42.9	1157	1.4	.12
08727	15.0	43.0	1131	1.6	.14
08728	16.3	44.7	951	.9	.08
08730	15.8	45.0	1191	1.6	.13
08731	15.2	43.0	1206	1.7	.15
08732	16.6	46.6	1135	1.6	.14
08733	15.3	43.3	1186	2.9	.25
08734	15.0	42.0	1068	2.3	.18
MEAN	15.7	44.0	1092	1.8	.15
S.D.	.62	1.39	119.3	.70	.059

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GROUP: 1	GROUP: 2
DOSE LEVEL: 0	DOSE LEVEL: 100
DOSE UNIT: MG/KG	DOSE UNIT: MG/KG
WBL TH/UL	WBL TH/UL
BLAST TH/UL (%)	BLAST TH/UL (%)
MET TH/UL (%)	MET TH/UL (%)
BAND TH/UL (%)	BAND TH/UL (%)
SEG TH/UL (%)	SEG TH/UL (%)
LYMPH TH/UL (%)	LYMPH TH/UL (%)
MONO TH/UL (%)	MONO TH/UL (%)
EOSIN TH/UL (%)	EOSIN TH/UL (%)
BASO TH/UL (%)	BASO TH/UL (%)
08602 11.9 .0(0) .0(0) 1.4(12) 10.5(88) .0(0) .0(0) .0(0)	08642 16.0 .0(0) .0(0) 2.9(18) 13.0(81) .0(0) .2(1) .0(0)
08603 15.2 .0(0) .0(0) 4.1(27) 10.5(69) .6(4) .0(0) .0(0)	08643 13.5 .0(0) .0(0) 3.5(26) 9.5(70) .4(3) .1(1) .0(0)
08604 13.0 .0(0) .0(0) 2.3(18) 10.0(77) .0(0) .2(2) .0(0)	08644 12.1 .0(0) .0(0) .8(7) 11.0(91) .0(0) .4(3) .0(0)
08605 14.5 .0(0) .0(0) 5.2(36) 9.1(63) .0(0) .0(0) .0(0)	08645 13.6 .0(0) .0(0) 2.6(19) 10.6(78) .0(0) .0(0) .0(0)
08606 12.7 .0(0) .0(0) 4.8(38) 7.9(62) .0(0) .0(0) .0(0)	08646 11.3 .0(0) .0(0) 2.1(19) 9.2(81) .0(0) .2(1) .0(0)
08607 15.1 .0(0) .0(0) 4.1(27) 10.7(71) .2(1) .2(1) .0(0)	08647 16.6 .0(0) .0(0) 1.5(9) 14.9(90) .0(0) .3(2) .0(0)
08608 12.4 .0(0) .0(0) 1.2(10) 10.4(84) .2(2) .1(1) .0(0)	08648 13.6 .0(0) .0(0) 1.1(8) 12.1(89) .1(1) .2(1) .0(0)
08609 12.3 .0(0) .0(0) 2.1(17) 9.7(79) .4(3) .0(0) .0(0)	08649 21.8 .0(0) .0(0) 3.2(15) 17.6(84) .0(0) .0(0) .0(0)
08610 11.6 .0(0) .0(0) 3.0(26) 8.6(74) .0(0) .0(0) .0(0)	08650 13.7 .0(0) .0(0) 1.2(10) 10.5(90) .0(0) .0(0) .0(0)
08611 14.0 .0(0) .0(0) 2.7(19) 11.1(79) .3(2) .3(2) .0(0)	08651 13.7 .0(0) .0(0) 2.6(19) 10.7(78) .1(1) .3(2) .0(0)
MEAN 13.3 .0 3.1 9.8 .2 .1 .0	MEAN 14.3 .0 2.1 11.9 .1 .2 .0
S.D. 1.33 .00 1.40 1.02 .21 .22 .00	S.D. 2.90 .00 .95 2.62 .13 .13 .00

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	WBC TH/UL	BLAST TH/UL (%)	HEM TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 3	DOSE LEVEL: 200								
	DOSAGE UNIT: MG/KG								
08682	11.4	.0(0)	.0(0)	.0(0)	1.8(16)	9.5(83)	.0(0)	.1(1)	.0(0)
08683	13.7	.0(0)	.0(0)	.0(0)	.4(3)	13.2(96)	.1(1)	.0(0)	.0(0)
08684	17.2	.0(0)	.0(0)	.0(0)	2.9(17)	13.9(81)	.2(1)	.2(1)	.0(0)
08685	15.9	.0(0)	.0(0)	.0(0)	2.5(16)	13.2(83)	.0(0)	.2(1)	.0(0)
08686	10.0	.0(0)	.0(0)	.0(0)	1.2(12)	8.8(88)	.0(0)	.0(0)	.0(0)
08687	14.5	.0(0)	.0(0)	.0(0)	1.3(9)	12.8(88)	.3(2)	.1(1)	.0(0)
08688	9.9	.0(0)	.0(0)	.0(0)	1.3(13)	8.6(87)	.0(0)	.0(0)	.0(0)
08689	14.4	.0(0)	.0(0)	.0(0)	2.2(15)	12.0(83)	.1(1)	.1(1)	.0(0)
08690	15.5	.0(0)	.0(0)	.0(0)	1.9(12)	13.3(86)	.0(0)	.3(2)	.0(0)
08691	11.4	.0(0)	.0(0)	.0(0)	1.8(16)	9.5(83)	.0(0)	.1(1)	.0(0)
MEAN	13.4	.0	.0	.0	1.7	11.5	.1	.1	.0
S.D.	2.56	.00	.00	.00	.72	2.12	.11	.10	.00
GROUP: 4	DOSE LEVEL: 800								
	DOSAGE UNIT: MG/KG								
08723	13.6	.0(0)	.0(0)	.0(0)	1.5(11)	11.6(85)	.3(2)	.3(2)	.0(0)
08724	11.9	.0(0)	.0(0)	.0(0)	1.7(14)	10.1(85)	.0(0)	.1(1)	.0(0)
08726	18.1	.0(0)	.0(0)	.0(0)	1.6(9)	16.1(89)	.4(2)	.0(0)	.0(0)
08727	15.6	.0(0)	.0(0)	.0(0)	3.7(24)	11.4(73)	.0(0)	.5(3)	.0(0)
08728	9.8	.0(0)	.0(0)	.0(0)	2.3(23)	7.5(77)	.0(0)	.0(0)	.0(0)
08730	14.2	.0(0)	.0(0)	.0(0)	2.3(16)	11.5(81)	.0(0)	.4(3)	.0(0)
08731	12.3	.0(0)	.0(0)	.0(0)	1.7(14)	10.6(86)	.0(0)	.0(0)	.0(0)
08732	11.1	.0(0)	.0(0)	.0(0)	1.7(15)	9.1(82)	.0(0)	.3(3)	.0(0)
08733	13.7	.0(0)	.0(0)	.0(0)	2.1(15)	11.5(84)	.0(0)	.1(1)	.0(0)
08734	10.9	.0(0)	.0(0)	.0(0)	2.0(18)	8.6(79)	.0(0)	.3(3)	.0(0)
MEAN	13.1	.0	.0	.0	2.1	10.8	.1	.2	.0
S.D.	2.47	.00	.00	.00	.64	2.34	.15	.18	.00

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INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	PULY	ECHINO	ALANTH	POIK	DOSAGE UNIT: MG/KG
GROUP: 1	DISE LEVEL: 0				
08602	T	-	-	-	
08603	1+	2+	T	-	
08604	T	-	-	-	
08605	T	T	T	-	
08606	T	T	-	-	
08607	1+	-	-	-	
08608	T	T	-	T	
08609	1+	T	-	-	
08610	1+	1+	T	-	
08611	T	T	-	-	
GROUP: 2	DISE LEVEL: 100				DOSAGE UNIT: MG/KG
08642	T	-	-	-	
08643	1+	T	-	-	
08644	1+	T	-	-	
08645	1+	T	-	-	
08646	T	T	-	-	
08647	1+	T	-	T	
08648	T	1+	-	-	
08649	1+	T	-	-	
08650	T	T	-	-	
08651	T	T	-	-	
GROUP: 3	DISE LEVEL: 200				DOSAGE UNIT: MG/KG
08682	T	T	-	-	
08683	T	T	-	-	
08684	T	T	-	-	
08685	T	T	T	-	
08686	T	T	-	-	
08687	T	T	-	-	
08688	T	T	-	-	
08689	T	T	-	-	
08690	T	-	-	-	
08691	T	T	-	-	

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ANIMAL NUMBER	POLY	ECRINO	ACANTH	POIK	
GROUP: 4	DOSE LEVEL: 800				DOSAGE UNIT: MG/KG
08723	T	1+	-	-	
08724	1+	T	-	-	
08726	1+	1+	T	-	
08727	T	T	-	-	
08728	T	1+	-	-	
08730	1+	T	T	-	
08731	1+	T	-	-	
08732	1+	1+	-	-	
08733	T	T	-	-	
08734	1+	1+	T	-	

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	RBC MI/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC MI/UL
GROUP: 5	DOSE LEVEL: BASELINE					
08767	6.49	14.4	42.2	1457	3.5	.23
08768	6.25	15.1	41.2	1308	4.6	.29
08769	5.69	14.7	37.0	1363	6.8	.39
08770	5.98	14.9	38.6	1488	4.3	.26
08771	5.96	14.4	36.7	1550	3.9	.23
MEAN	6.07	14.7	39.1	1433	4.6	.28
S.D.	.305	.31	2.47	97.2	1.29	.066

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ANIMAL NUMBER	WBC TH/UL	BLAST TH/UL (%)	MET TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 5	DOSE LEVEL: BASELINE DOSAGE UNIT:								
08767	12.6	.0(0)	.0(0)	.0(0)	1.6(13)	10.8(86)	.1(1)	.0(0)	.0(0)
08768	12.5	.0(0)	.0(0)	.0(0)	1.0(8)	11.5(92)	.0(0)	.0(0)	.0(0)
08769	13.5	.0(0)	.0(0)	.0(0)	1.9(14)	11.6(86)	.0(0)	.0(0)	.0(0)
08770	11.5	.0(0)	.0(0)	.0(0)	.7(6)	10.7(93)	.0(0)	.1(1)	.0(0)
08771	7.6	.0(0)	.0(0)	.0(0)	.7(9)	6.6(87)	.2(3)	.1(1)	.0(0)
MEAN	11.5	.0	.0	.0	1.2	10.2	.1	.0	.0
S.D.	2.31	.00	.00	.00	.54	2.07	.09	.05	.00

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ANIMAL NUMBER	POLY	TARGET	ECHINO	DOSE LEVEL: BASELINE	DOSAGE UNIT:
GROUP: 5					
08767	1+	T	1+		
08768	1+	-	3+		
08769	1+	-	3+		
08770	1+	-	2+		
08771	1+	-	3+		

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	RBC M/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC M/UL
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GROUP: 1 DOSE LEVEL: 0 DOSAGE UNIT: MG/KG

08622 R	6.42	15.2	35.5	1463	3.8	.24
08623 R	4.93	12.5	29.0	1146	3.0	.15
08624	5.52	14.5	32.4	1376	1.9	.10
08625	7.18	15.2	40.4	1219	1.2	.09
08626	7.15	16.2	40.5	1162	.9	.06
08627	7.93	17.2	45.8	835	3.6	.29
08628	5.90	14.5	34.9	1441	3.6	.21
08629	6.48	16.1	38.5	1317	1.6	.10
08630	6.41	15.5	36.3	1264	1.3	.08
08631	7.55	17.0	42.0	919	2.6	.20

MEAN	6.55	15.4	37.5	1214	2.3	.15
S.D.	.932	1.38	4.92	208.4	1.11	.078

GROUP: 2 DOSE LEVEL: 100 DOSAGE UNIT: MG/KG

08662 R	4.71	12.3	27.1	1368	NO TEST	NO TEST
08663 R	5.07	12.4	29.9	1274	5.5	.28
08664	6.85	16.3	39.6	471	1.9	.13
08665 R	5.47	13.7	32.7	873	5.0	.27
08666	5.88	15.1	33.3	1097	1.5	.09
08667	6.14	16.1	35.7	1154	1.3	.08
08668	7.20	17.3	41.5	486	1.4	.10
08669	7.68	17.3	42.8	998	1.2	.09
08670	6.15	15.3	35.4	1097	1.3	.08
08671 R	5.01	12.5	29.9	829	4.9	.25

MEAN	6.02	14.8	34.8	965	2.7	.15
S.D.	.990	1.98	5.24	303.7	1.87	.087

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	RBC MI/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC MI/UL
------------------	--------------	-------------	----------	-------------------	----------------	------------------

GROUP: 3 DOSE LEVEL: 200 DOSAGE UNIT: MG/KG

08702	6.30	16.8	37.2	756	NO TEST	NO TEST
08703 R	4.83	12.5	28.1	1019	5.6	.27
08704 R	5.67	13.0	34.0	1369	4.5	.26
08706	6.65	16.9	37.3	1381	.9	.06
08707	5.73	16.2	33.9	854	1.0	.06
08708	6.91	15.6	39.8	1089	2.7	.19
08709 R	5.22	12.2	28.7	1218	2.0	.10
08710	6.77	16.6	40.1	1338	.9	.06
08711	8.32	17.8	43.9	1321	1.3	.11
08712	7.42	15.6	42.8	967	.7	.05
MEAN	6.38	15.3	36.6	1131	2.2	.13
S.D.	1.056	2.01	5.41	227.1	1.77	.088

GROUP: 4 DOSE LEVEL: 800 DOSAGE UNIT: MG/KG

08742	6.01	16.0	33.4	1251	1.1	.07
08743	5.15	13.4	30.7	1499	3.5	.18
08744 R	5.25	13.4	31.8	1084	3.4	.18
08745	6.17	16.2	36.0	1188	.9	.06
08746	5.82	16.5	34.4	509	3.2	.19
08747	5.86	15.5	34.2	918	1.9	.11
08748	5.84	16.0	33.7	1178	1.9	.11
08749	8.02	17.8	44.0	1268	1.4	.11
08750 R	4.52	11.1	27.0	1194	2.5	.11
08751	6.70	15.8	38.1	1292	1.6	.11
MEAN	5.93	15.2	34.3	1138	2.1	.12
S.D.	.949	1.96	4.54	266.2	.96	.045

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	WBC TH/UL	'BLAST TH/UL (%)	META TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 1	DOSE LEVEL: 0 DOSAGE UNIT: MG/KG								
08622 R	16.9	.0(0)	.0(0)	.0(0)	1.9(11)	14.2(84)	.7(4)	.2(1)	.0(0)
08623 R	14.6	.0(0)	.0(0)	.0(0)	2.8(19)	11.7(80)	.1(1)	.0(0)	.0(0)
08624	15.9	.0(0)	.0(0)	.0(0)	1.7(11)	13.5(85)	.2(1)	.5(3)	.0(0)
08625	16.7	.0(0)	.0(0)	.0(0)	3.5(21)	12.5(75)	.2(1)	.5(3)	.0(0)
08626	14.1	.0(0)	.0(0)	.0(0)	2.7(19)	11.1(79)	.0(0)	.3(2)	.0(0)
08627	10.2	.0(0)	.0(0)	.0(0)	1.3(13)	8.8(86)	.0(0)	.1(1)	.0(0)
08628	13.8	.0(0)	.0(0)	.0(0)	1.0(7)	12.7(92)	.0(0)	.1(1)	.0(0)
08629	18.9	.0(0)	.0(0)	.0(0)	1.9(10)	17.0(90)	.0(0)	.0(0)	.0(0)
08630	14.3	.0(0)	.0(0)	.0(0)	1.7(12)	12.3(86)	.1(1)	.1(1)	.0(0)
08631	17.7	.0(0)	.0(0)	.0(0)	2.8(16)	14.9(84)	.0(0)	.0(0)	.0(0)
MEAN	15.3	.0	.0	.0	2.1	12.9	.1	.2	.0
S.D.	2.47	.00	.00	.00	.78	2.23	.22	.19	.00
GROUP: 2	DOSE LEVEL: 100 DOSAGE UNIT: MG/KG								
08662 R	21.0	.0(0)	.0(0)	.0(0)	5.5(26)	15.3(73)	.0(0)	.2(1)	.0(0)
08663 R	18.8	.0(0)	.0(0)	.0(0)	6.4(34)	11.8(63)	.6(3)	.0(0)	.0(0)
08664	12.5	.0(0)	.0(0)	.0(0)	1.5(12)	10.5(84)	.1(1)	.4(3)	.0(0)
08665 R	18.6	.0(0)	.0(0)	.0(0)	3.5(19)	14.9(80)	.2(1)	.0(0)	.0(0)
08666	10.8	.0(0)	.0(0)	.0(0)	.8(7)	10.0(93)	.0(0)	.0(0)	.0(0)
08667	20.6	.0(0)	.0(0)	.0(0)	1.4(7)	19.2(93)	.0(0)	.0(0)	.0(0)
08668	19.0	.0(0)	.0(0)	.0(0)	5.7(30)	13.3(70)	.0(0)	.0(0)	.0(0)
08669	18.1	.0(0)	.0(0)	.0(0)	3.8(21)	14.1(78)	.0(0)	.2(1)	.0(0)
08670	12.0	.0(0)	.0(0)	.0(0)	1.9(16)	9.5(79)	.1(1)	.5(4)	.0(0)
08671 R	24.1	.0(0)	.0(0)	.0(0)	12.3(51)	10.8(45)	.7(3)	.2(1)	.0(0)
MEAN	17.5	.0	.0	.0	4.3	12.9	.2	.1	.0
S.D.	4.36	.00	.00	.00	3.45	3.03	.26	.18	.00

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ANIMAL NUMBER	WBC TH/UL	BLAST TH/UL (%)	MET TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 3	DOSE LEVEL: 200								
	DOSAGE UNIT: MG/KG								
08702	21.6	.0(0)	.0(0)	.0(0)	2.6(12)	17.9(83)	.6(3)	.4(2)	.0(0)
08703 R	18.8	.0(0)	.0(0)	.0(0)	5.8(31)	12.2(65)	.4(2)	.4(2)	.0(0)
08704 R	18.7	.0(0)	.0(0)	.0(0)	4.7(25)	14.0(75)	.0(0)	.0(0)	.0(0)
08706	14.7	.0(0)	.0(0)	.0(0)	2.1(14)	12.5(85)	.0(0)	.1(1)	.0(0)
08707	18.5	.0(0)	.0(0)	.0(0)	1.8(10)	16.5(89)	.2(1)	.0(0)	.0(0)
08708	12.8	.0(0)	.0(0)	.0(0)	1.2(9)	11.4(89)	.1(1)	.1(1)	.0(0)
08709 R	14.8	.0(0)	.0(0)	.0(0)	5.3(36)	9.2(62)	.0(0)	.3(2)	.0(0)
08710	17.5	.0(0)	.0(0)	.0(0)	1.4(8)	15.9(91)	.0(0)	.2(1)	.0(0)
08711	10.8	.0(0)	.0(0)	.0(0)	1.4(13)	9.2(85)	.1(1)	.1(1)	.0(0)
08712	12.4	.0(0)	.0(0)	.0(0)	2.0(16)	10.0(81)	.0(0)	.4(3)	.0(0)
MEAN	16.1	.0	.0	.0	2.8	12.9	.1	.2	.0
S.D.	3.47	.00	.00	.00	1.75	3.11	.21	.16	.00
GROUP: 4	DOSE LEVEL: 800								
	DOSAGE UNIT: MG/KG								
08742	15.4	.0(0)	.0(0)	.0(0)	1.2(8)	14.0(91)	.0(0)	.2(1)	.0(0)
08743	20.1	.0(0)	.0(0)	.0(0)	4.0(20)	15.7(78)	.2(1)	.2(1)	.0(0)
08744 R	18.0	.0(0)	.0(0)	.0(0)	4.1(23)	13.5(75)	.4(2)	.0(0)	.0(0)
08745	16.5	.0(0)	.0(0)	.0(0)	1.3(8)	15.0(91)	.2(1)	.0(0)	.0(0)
08746	24.1	.0(0)	.0(0)	.0(0)	2.7(11)	21.2(88)	.0(0)	.2(1)	.0(0)
08747	12.7	.0(0)	.0(0)	.0(0)	1.5(12)	10.5(83)	.3(2)	.4(3)	.0(0)
08748	17.3	.0(0)	.0(0)	.0(0)	1.9(11)	15.1(87)	.0(0)	.3(2)	.0(0)
08749	19.1	.0(0)	.0(0)	.0(0)	2.1(11)	16.8(88)	.0(0)	.2(1)	.0(0)
08750 R	18.2	.0(0)	.0(0)	.0(0)	6.9(38)	11.3(62)	.0(0)	.0(0)	.0(0)
08751	15.6	.0(0)	.0(0)	.0(0)	2.2(14)	12.9(83)	.2(1)	.3(2)	.0(0)
MEAN	17.7	.0	.0	.0	2.8	14.6	.1	.2	.0
S.D.	3.08	.00	.00	.00	1.77	3.02	.15	.14	.00

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	POLY	TARGET	ECHINO	ACANTH	POIK	HJBODY	NRBC
GROUP: 1 DOSE LEVEL: 0 DOSAGE UNIT: MG/KG							
08622 R	1+	-	4+	T	-	-	-
08623 R	1+	-	4+	-	-	-	-
08624	T	-	4+	-	-	-	-
08625	T	-	4+	-	-	-	-
08626	T	T	4+	-	-	-	-
08627	T	-	4+	-	-	-	-
08628	1+	-	4+	-	-	-	-
08629	T	-	4+	-	-	-	1
08630	T	-	4+	-	-	-	-
08631	T	-	3+	-	-	-	-
GROUP: 2 DOSE LEVEL: 100 DOSAGE UNIT: MG/KG							
08662 R	1+	-	4+	-	-	-	-
08663 R	1+	-	2+	T	-	-	-
08664	T	-	4+	-	-	-	-
08665 R	1+	-	4+	-	-	-	-
08666	T	-	4+	-	-	-	-
08667	T	-	4+	-	-	-	-
08668	T	-	4+	-	-	-	-
08669	T	-	4+	-	-	-	-
08670	T	-	4+	-	-	-	-
08671 R	1+	-	4+	-	-	FEW	-
GROUP: 3 DOSE LEVEL: 200 DOSAGE UNIT: MG/KG							
08702	1+	-	4+	-	-	-	-
08703 R	1+	-	4+	-	-	-	-
08704 R	1+	-	4+	-	-	-	-
08706	T	-	4+	-	-	-	-
08707	T	-	4+	-	-	-	-
08708	T	-	4+	-	-	-	-
08709 R	T	-	3+	-	-	-	-
08710	1+	-	4+	-	-	-	-
08711	T	-	4+	-	-	-	-
08712	T	-	3+	-	T	-	-

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SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	POLY	TARGET	ECHINO	ACANTH	POIK	HJBODY	NRBC
GROUP: 4	DOSE LEVEL: 800						
				DOSAGE UNIT: MG/KG			
08742	T	-	4+	-	-	-	-
08743	T	-	2+	-	-	-	-
08744 R	1+	-	4+	T	-	-	-
08745	T	-	3+	-	-	-	-
08746	T	-	4+	-	-	-	-
08747	T	-	4+	-	-	-	-
08748	T	-	4+	-	-	-	-
08749	T	-	4+	-	-	-	-
08750 R	T	-	3+	-	-	-	-
08751	T	-	4+	-	-	-	-

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INDIVIDUAL CLINICAL PHARMACOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

GROUP	SEX	AGE	WGT	PLASMA	RETIC	A RETIC
NUMBER		WEEK	KG	TH/UL	% RBC	ML/UL

GROUP: 1	DOSE LEVEL: 0	DOSE UNIT: MG/KG
006022	2.86	14.6
006023	7.40	14.2
006024	6.31	12.2
006025	8.02	15.2
006026	7.85	15.1
006027	8.10	15.6
006028	6.05	12.2
006029	7.35	14.2
006030	7.88	15.1
006031	7.80	14.6
006032	7.47	14.4
006033	7.24	11.1

GROUP: 2	DOSE LEVEL: 100	DOSE UNIT: MG/KG
006034	2.49	14.3
006035	2.36	14.5
006036	2.50	15.1
006037	8.08	15.2
006038	2.62	15.0
006039	8.02	15.3
006040	8.64	16.1
006041	8.14	16.0
006042	2.99	15.5
006043	2.55	15.0
006044	2.85	15.2
006045	2.40	16.0

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APPENDIX 6

PHOTOGRAPHIC CHANGES IN HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

INITIAL TREATMENT	PRE NL/UL	HGB G/DL	HCT %	PLATELET TH/UL	RETIC % RBC	A RETIC M/UL
GROUP: 3	DOSF LEVEL: 200			DOSAGE UNIT: MG/KG		
08/202	7.48	15.2	41.4	1058	2.0	.15
08/203	8.48	16.3	45.3	853	.7	.06
08/204	8.02	16.2	44.9	1293	2.0	.16
08/207	7.35	14.2	40.4	1081	1.4	.10
08/208	8.06	15.2	43.1	1035	1.2	.10
08/209	8.12	15.1	42.3	1141	1.2	.10
08/210	7.21	14.6	40.9	1074	2.6	.19
08/211	8.69	15.8	43.2	1216	1.2	.10
08/212	7.95	15.8	42.8	1143	1.0	.08
08/213	7.41	14.2	40.4	1061	3.0	.22
Mean	7.88	15.3	42.5	1096	1.6	.13
S.D.	.499	.30	1.74	112.2	.74	.051
GROUP: 4	DOSF LEVEL: 800			DOSAGE UNIT: MG/KG		
08/242	8.17	15.3	42.1	1291	.5	.04
08/244	7.28	14.8	41.2	981	1.1	.08
08/246	7.28	15.9	44.2	881	1.5	.12
08/247	7.22	15.3	41.8	892	1.2	.09
08/248	7.77	14.9	41.8	1006	.7	.05
08/249	8.47	15.5	45.2	1036	1.3	.11
08/250	7.35	14.4	40.6	1138	.9	.07
08/251	7.67	14.2	40.5	1195	2.7	.21
08/252	8.20	15.5	43.9	1003	1.6	.13
08/253	7.60	14.8	42.0	1280	1.2	.09
Mean	7.80	15.1	42.3	1070	1.3	.10
S.D.	.528	.46	1.58	148.4	.61	.048

S2399110 KAF FEMALES WEEK: 013 PAGE: 1

APPENDIX 6
INDIVIDUAL LIVER HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	WBC TH/UL	BLAST TH/UL (%)	NETA TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
GROUP: 1	DOSE LEVEL: 0 DOSE UNIT: MG/KG								
UB662	12.2	.00	.00	.00	.90	11.1	.10	.10	.00
UB663	11.9	.00	.00	.00	.80	10.7	.20	.10	.00
UB664	9.2	.00	.00	.00	1.9	6.8	.20	.30	.00
UB665	10.4	.00	.00	.00	1.9	8.3	.00	.20	.00
UB666	11.1	.00	.00	.00	1.1	9.2	.00	.30	.00
UB667	4.6	.00	.00	.00	.60	4.0	.00	.00	.00
UB668	9.6	.00	.00	.00	1.0	8.6	.00	.00	.00
UB669	11.8	.00	.00	.00	1.9	9.9	.00	.00	.00
UB670	12.1	.00	.00	.00	1.2	10.8	.00	.10	.00
UB671	8.7	.00	.00	.00	2.6	5.9	.10	.10	.00
MEAN	10.2	.00	.00	.00	1.4	8.6	.10	.10	.00
S.D.	2.55	.00	.00	.00	.64	2.36	.08	.11	.00

GROUP: 2	DOSE LEVEL: 100 DOSE UNIT: MG/KG								
UB662	16.2	.00	.00	.00	1.6	14.4	.00	.20	.00
UB664	11.5	.00	.00	.00	4.1	7.1	.10	.10	.00
UB665	15.0	.00	.00	.00	1.4	13.5	.20	.00	.00
UB666	7.8	.00	.00	.00	1.3	6.4	.00	.10	.00
UB667	11.9	.00	.00	.00	2.5	9.2	.10	.10	.00
UB668	17.5	.00	.00	.00	.7	16.5	.00	.30	.00
UB669	9.5	.00	.00	.00	.8	8.7	.00	.00	.00
UB670	12.0	.00	.00	.00	1.4	10.6	.00	.00	.00
UB671	12.9	.00	.00	.00	3.9	8.8	.00	.30	.00
UB672	16.3	.00	.00	.00	3.4	12.6	.20	.20	.00
MEAN	13.1	.00	.00	.00	2.1	10.8	.10	.10	.00
S.D.	3.15	.00	.00	.00	1.27	3.35	.08	.12	.00

S2399110 RAT FEMALES WEEK: 013 PAGE: 2

APPENDIX 6
INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

RAT NUMBER	WBC TH/UL	BLAST TH/UL (%)	META TH/UL (%)	BAND TH/UL (%)	SEG TH/UL (%)	LYMPH TH/UL (%)	MONO TH/UL (%)	EOSIN TH/UL (%)	BASO TH/UL (%)
	DOSE LEVEL: 200								
GROUP: 3	DOSE UNIT: MG/KG								
08201	13.6	.00 (0)	.00 (0)	.00 (0)	2.4 (18)	11.0 (81)	.00 (0)	.10 (1)	.00 (0)
08202	10.2	.00 (0)	.00 (0)	.00 (0)	1.6 (16)	8.4 (82)	.00 (0)	.20 (2)	.00 (0)
08203	9.8	.00 (0)	.00 (0)	.00 (0)	1.9 (19)	2.9 (11)	.00 (0)	.00 (0)	.00 (0)
08204	12.0	.00 (0)	.00 (0)	.00 (0)	1.7 (14)	10.1 (84)	.10 (1)	.10 (1)	.00 (0)
08205	10.7	.00 (0)	.00 (0)	.00 (0)	1.5 (14)	9.2 (86)	.00 (0)	.00 (0)	.00 (0)
08206	6.6	.00 (0)	.00 (0)	.00 (0)	.7 (11)	5.7 (87)	.00 (0)	.10 (2)	.00 (0)
08207	13.5	.00 (0)	.00 (0)	.00 (0)	.7 (5)	12.4 (92)	.00 (0)	.40 (3)	.00 (0)
08208	8.6	.00 (0)	.00 (0)	.00 (0)	.9 (10)	7.6 (88)	.10 (1)	.10 (1)	.00 (0)
08209	10.4	.00 (0)	.00 (0)	.00 (0)	.5 (5)	9.7 (93)	.00 (0)	.20 (2)	.00 (0)
08210	12.3	.00 (0)	.00 (0)	.00 (0)	1.6 (13)	10.2 (83)	.10 (1)	.40 (3)	.00 (0)
MEAN S.D.	10.8 2.18	.0 .00	.0 .00	.0 .00	1.3 .62	9.2 1.91	.0 .09	.2 .14	.0 .00
GROUP: 4	DOSE UNIT: MG/KG								
DOSE LEVEL: 800									
08242	7.9	.00 (0)	.00 (0)	.00 (0)	.9 (11)	2.0 (88)	.00 (0)	.10 (1)	.00 (0)
08243	9.4	.00 (0)	.00 (0)	.00 (0)	1.0 (11)	8.0 (85)	.10 (1)	.30 (3)	.00 (0)
08244	20.8	.00 (0)	.00 (0)	.00 (0)	2.0 (10)	18.0 (90)	.00 (0)	.00 (0)	.00 (0)
08245	10.8	.00 (0)	.00 (0)	.00 (0)	1.1 (10)	9.5 (88)	.00 (0)	.20 (2)	.00 (0)
08246	14.5	.00 (0)	.00 (0)	.00 (0)	4.8 (33)	9.6 (66)	.00 (0)	.10 (1)	.00 (0)
08247	11.1	.00 (0)	.00 (0)	.00 (0)	3.4 (31)	7.3 (66)	.20 (2)	.10 (1)	.00 (0)
08248	12.9	.00 (0)	.00 (0)	.00 (0)	1.0 (8)	11.6 (90)	.00 (0)	.30 (2)	.00 (0)
08249	13.2	.00 (0)	.00 (0)	.00 (0)	3.3 (25)	9.8 (74)	.00 (0)	.10 (1)	.00 (0)
08250	9.0	.00 (0)	.00 (0)	.00 (0)	1.5 (17)	7.4 (82)	.00 (0)	.10 (1)	.00 (0)
08251	13.9	.00 (0)	.00 (0)	.00 (0)	2.5 (18)	11.4 (82)	.00 (0)	.00 (0)	.00 (0)
MEAN S.D.	12.3 3.50	.0 .00	.0 .00	.0 .00	2.1 1.32	10.0 3.22	.0 .07	.1 .11	.0 .00

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FEMALS

RAT

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APPENDIX 6

INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	POLY	ECHOED	ACANIN	POIK
GROUP: 1	DOSE LEVEL: 0	DOSE UNIT: MG/KG		
08620	1	1	-	-
08623	1	3+	-	-
08624	1+	2+	-	-
08626	1+	1	-	-
08626	1	-	-	-
08627	1	-	-	-
08628	1+	3+	-	-
08629	1	1+	-	-
08630	1	1	-	-
08631	1	1	-	-
GROUP: 2	DOSE LEVEL: 100	DOSE UNIT: MG/KG		
08662	1	1+	-	-
08664	1	1	-	-
08665	1+	1	-	-
08666	1+	1	-	-
08667	1	1	-	-
08668	1	-	-	-
08669	1	1	-	-
08670	1	1	-	-
08671	1+	1	-	-
08672	1	1	-	-
GROUP: 3	DOSE LEVEL: 200	DOSE UNIT: MG/KG		
08702	1	1	-	-
08703	1	-	-	-
08704	1+	1	-	-
08707	1	3+	-	-
08708	1	-	-	-
08709	1	1	-	-
08710	1	1	-	-
08711	1	1+	-	-
08712	1	1	-	-
08713	1	1	-	-

S2399110 RAT FEMALES WEEK: 013 PAGE: 2

APPENDIX 6
INDIVIDUAL CLINICAL HEMATOLOGY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	PRLY	ECHINI	ACANTH	POIK

GROUP: 4	DOSE LEVEL: 800			
	DOSAGE UNIT: MG/KG			
08242	T	T	-	-
08244	T	T	-	-
08246	-	-	-	-
08247	T	2+	-	-
08248	T	T	-	-
08249	T	-	-	-
08250	T	T	-	-
08251	1+	T	-	-
08252	1+	T	-	-
08253	T	T	-	-



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- 150 -

APPENDIX 7

Individual Clinical Chemistry Values



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KEY TO CLINICAL CHEMISTRY

H1 = Trace Hemolysis

H2 = Slight Hemolysis

H3 = Moderate Hemolysis

H4 = Marked Homolysis

H5 = Severe Hemolysis

SL = Slightly Lipemic

S2399110 RAT MALES WEEK: -01 PAGE: 1

APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 5	DOSE LEVEL: BASELINE DOSAGE UNIT:									
08762 H2	144.8	6.35	103.8	5.7	3.9	1.8	2.17	10.8	10.2	.0
08763 H2	142.2	5.64	101.8	5.3	3.4	1.9	1.79	11.1	10.1	.0
08764 H2	145.7	7.27	107.6	5.6	3.7	1.9	1.95	9.9	QNS	QNS
08765	145.3	5.97	107.2	5.2	3.8	1.4	2.71	11.4	11.0	.2
08766	145.7	6.64	104.5	5.4	3.7	1.7	2.18	10.7	10.6	.2
MEAN	144.7	6.37	105.0	5.4	3.7	1.7	2.16	10.8	10.5	.1
S.D.	1.47	.628	2.43	.21	.19	.21	.348	.56	.41	.12

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 5	DOSE LEVEL: BASELINE DOSAGE UNIT:							
08762 H2	16	.7	97	80	178	37	243	639
08763	7	.7	79	114	90	23	175	430
08764 H2	13	QNS	80	QNS	213	47	460	879
08765	19	.7	109	91	100	28	285	716
08766	15	.7	103	73	95	23	298	551
MEAN	14	.7	94	90	135	32	292	643
S.D.	4.5	.00	13.6	17.9	56.5	10.3	105.4	169.5

S2399110 RAT MALES WEEK: 005 PAGE: 1

APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 1	DOSE LEVEL: 0 DOSAGE UNIT: MG/KG									
08602	147.1	5.87	108.3	6.1	3.7	2.4	1.54	10.1	8.9	.0
08603	144.8	5.59	106.0	6.2	3.8	2.4	1.58	10.7	9.2	.0
08604 HI	145.6	6.38	108.8	5.8	3.8	2.0	1.90	10.4	9.4	.0
08605 HI	147.6	6.76	106.8	6.8	4.2	2.6	1.62	11.1	10.5	.0
08606 HI	145.2	6.35	106.8	6.3	4.1	2.2	1.86	10.1	8.6	.0
08607 HI	149.3	6.49	107.5	6.6	4.0	2.6	1.54	10.5	10.3	.0
08608	144.5	5.67	106.5	5.7	3.8	1.9	2.00	10.6	8.7	.1
08609 HI	146.1	6.30	107.5	6.6	4.2	2.4	1.75	10.7	9.0	.1
08610	146.8	6.63	106.8	6.8	4.3	2.5	1.72	10.6	9.6	.0
08611	144.9	5.73	106.3	5.8	3.8	2.0	1.90	9.9	8.4	.0
MEAN	146.2	6.18	107.1	6.3	4.0	2.3	1.74	10.5	9.3	.0
S.D.	1.51	.425	.89	.42	.22	.26	.168	.36	.70	.04
GROUP: 2	DOSE LEVEL: 100 DOSAGE UNIT: MG/KG									
08642	143.4	5.38	100.3	6.6	4.0	2.6	1.54	10.9	9.8	.0
08643 HI	146.1	6.98	106.6	6.3	4.0	2.3	1.74	10.8	9.2	.0
08644	144.6	6.50	109.0	5.8	3.7	2.1	1.76	10.3	8.6	.0
08645 HI	145.7	5.85	105.0	6.2	3.8	2.4	1.58	10.5	8.8	.0
08646	145.6	5.63	104.3	6.4	4.0	2.4	1.67	10.8	9.4	.0
08647 HI	145.1	6.78	107.5	6.6	4.1	2.5	1.64	10.4	8.4	.1
08648 H2	145.9	7.16	105.0	5.4	2.7	2.7	1.08	10.4	9.2	.2
08649 HI	145.8	5.56	105.6	6.3	3.9	2.4	1.63	10.7	9.2	.1
08650 HI	148.1	6.28	109.7	6.4	4.0	2.4	1.67	10.7	10.6	.0
08651 HI	144.6	6.44	106.5	5.9	3.8	2.1	1.81	10.1	8.4	.0
MEAN	145.5	6.26	105.9	6.2	3.8	2.4	1.60	10.6	9.2	.0
S.D.	1.23	.625	2.65	.38	.41	.19	.227	.26	.68	.07

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 3	DOSE LEVEL: 200 DOSAGE UNIT: MG/KG									
08682 HI	147.7	6.33	109.2	6.2	4.0	2.2	1.82	10.2	9.5	.0
08683	139.9	5.99	105.0	5.8	3.7	2.1	1.76	9.8	7.7	.0
08684	143.4	6.10	105.5	6.1	3.8	2.3	1.65	10.7	8.5	.0
08685	146.1	6.74	106.0	6.1	3.9	2.2	1.77	10.9	9.6	.0
08686 HI	146.7	5.93	109.2	6.1	4.0	2.1	1.90	10.5	8.2	.0
08687 HI	145.1	6.19	107.5	6.3	4.3	2.0	2.15	10.5	9.2	.1
08688 HI	143.9	6.17	104.8	6.0	3.8	2.2	1.73	10.2	8.5	.1
08689	145.3	5.89	106.0	6.6	4.0	2.6	1.54	10.4	9.0	.1
08690	146.6	6.52	106.8	7.0	4.2	2.8	1.50	10.7	9.0	.0
08691	145.5	6.47	105.8	6.4	4.0	2.4	1.67	10.5	9.7	.0
MEAN	145.0	6.23	106.7	6.3	4.0	2.3	1.75	10.4	8.9	.0
S.D.	2.21	.278	1.92	.34	.18	.25	.186	.31	.65	.05
GROUP: 4	DOSE LEVEL: 800 DOSAGE UNIT: MG/KG									
08722 HI	145.6	6.39	107.5	6.4	4.3	2.1	2.05	11.1	9.8	.0
08723	147.4	5.86	109.5	6.3	4.0	2.3	1.74	11.2	9.6	.0
08724	145.3	5.99	107.0	5.7	3.6	2.1	1.71	10.5	9.5	.0
08725 HI	146.4	7.24	106.6	6.1	3.9	2.2	1.77	10.5	10.7	.0
08726 HI	146.4	6.58	108.3	6.2	3.8	2.4	1.58	10.8	10.1	.0
08727 HI	144.9	6.79	105.5	6.6	4.2	2.4	1.75	11.2	8.8	.1
08728 HI	145.5	6.17	107.5	6.6	4.1	2.5	1.64	10.7	9.6	.1
08729	145.6	6.23	104.5	6.6	4.1	2.5	1.64	10.7	8.7	.1
08730	146.2	6.30	107.0	5.9	3.8	2.1	1.81	10.1	9.0	.0
08731	144.0	6.25	107.0	6.2	3.9	2.3	1.70	10.3	9.1	.0
MEAN	145.7	6.38	107.0	6.3	4.0	2.3	1.74	10.7	9.5	.0
S.D.	.93	.403	1.38	.31	.21	.16	.129	.38	.62	.05

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MALES

RAT

S2399110

APPENDIX 7

INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 1	DOSE LEVEL: 0	DOSAGE UNIT: MG/KG						
08602	8	.7	83	106	85	22	144	482
08603	10	.6	90	74	68	24	196	288
08604 HI	13	.6	104	78	135	43	171	842
08605 HI	10	.6	85	55	115	33	214	586
08606 HI	12	.7	102	88	129	36	155	572
08607 HI	11	.6	101	41	232	44	126	770
08608	10	.6	99	60	66	22	124	436
08609 HI	11	.7	105	70	74	29	178	391
08610	10	.8	99	96	96	31	151	556
08611	11	.6	104	53	61	26	149	199
MEAN	11	.6	97	68	106	31	161	512
S.D.	1.3	.07	8.2	19.0	51.6	8.0	29.0	198.9
GROUP: 2	DOSE LEVEL: 100	DOSAGE UNIT: MG/KG						
08642	21	.8	96	67	64	30	159	92
08643 HI	9	.6	90	62	86	26	136	545
08644	8	.6	94	50	92	31	106	287
08645 HI	11	.6	90	66	96	31	93	683
08646	10	.6	86	123	78	23	152	436
08647 HI	9	.8	118	101	105	30	99	705
08648 HI	15	.6	109	309	40	25	103	156
08649 HI	9	.6	104	55	103	34	187	354
08650 HI	11	.7	92	49	170	44	162	436
08651 HI	8	.6	97	59	87	31	167	430
MEAN	11	.6	98	94	92	31	136	412
S.D.	4.0	.08	9.9	79.1	33.6	5.8	33.7	201.5

S2399110 RAT MALES WEEK: 005 PAGE: 2

APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 3	DOSE LEVEL: 200			DOSAGE UNIT: MG/KG				
08682 HI	11	.6	98	63	129	46	139	320
08683	14	.6	87	46	108	66	116	511
08684	13	.5	114	56	66	25	172	437
08685	13	.6	98	62	100	27	189	970
08686 HI	9	.6	102	54	81	32	142	462
08687 HI	9	.7	100	63	96	43	157	457
08688 HI	13	.7	96	59	107	43	157	547
08689	10	.7	108	56	66	20	130	234
08690	9	.7	98	81	79	32	178	174
08691	10	.7	123	65	89	23	134	188
MEAN	11	.6	102	61	92	36	151	430
S.D.	2.0	.07	10.2	9.1	19.9	14.0	23.2	232.9
GROUP: 4	DOSE LEVEL: 800			DOSAGE UNIT: MG/KG				
08722 HI	11	.6	106	76	88	35	176	490
08723	7	.7	78	113	67	26	112	337
08724	8	.7	83	55	79	31	141	245
08725 HI	10	.4	93	64	258	52	133	1040
08726 HI	9	.6	94	83	93	32	151	597
08727 HI	13	.7	102	109	87	33	165	765
08728 HI	8	.7	95	92	121	41	160	627
08729	7	.7	99	74	74	30	160	425
08730	7	.7	99	77	85	33	158	316
08731	12	.7	98	63	93	36	180	505
MEAN	9	.6	95	81	105	35	154	535
S.D.	2.2	.10	8.5	19.2	55.8	7.2	20.4	237.2

APPENDIX 7 INDIVIDUAL CLINICAL CHEMISTRY VALUES SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 1	DOSE LEVEL: 0									
	DOSAGE UNIT: MG/KG									
08602	152.1	5.95	107.9	6.9	4.0	2.9	1.38	10.6	7.7	.0
08603	146.1	6.00	106.0	6.3	3.7	2.6	1.42	10.6	7.9	.1
08604	148.1	5.89	109.0	6.0	3.8	2.2	1.73	10.1	7.9	.1
08605	152.5	5.89	104.1	5.8	3.9	2.9	1.34	10.5	7.9	.0
08606	151.4	6.25	107.4	5.9	3.7	2.2	1.68	9.7	7.4	.1
08607	150.9	6.41	104.1	6.6	3.8	2.8	1.36	10.1	7.4	.0
08608 HI	148.9	6.03	104.6	6.4	4.0	2.4	1.67	10.4	7.4	.1
08609	149.8	6.40	103.4	6.4	3.7	2.7	1.37	10.5	7.7	.1
08610	147.7	6.57	108.8	6.3	3.9	2.4	1.63	10.6	8.6	.0
08611	144.9	6.31	103.6	6.3	3.9	2.4	1.63	11.0	8.7	.2
MEAN	149.2	6.17	105.9	6.4	3.8	2.5	1.52	10.4	7.9	.1
S.D.	2.56	.247	2.21	.31	.12	.27	.159	.36	.46	.07
GROUP: 2	DOSE LEVEL: 100									
	DOSAGE UNIT: MG/KG									
08642	150.7	5.89	106.9	6.7	4.0	2.7	1.48	10.5	7.5	.0
08643 HI	147.5	5.92	101.7	6.5	3.8	2.7	1.41	10.3	7.3	.1
08644	147.5	5.80	106.0	5.9	3.7	2.2	1.68	9.9	7.0	.0
08645	150.1	6.28	105.1	6.9	4.0	2.9	1.38	10.3	7.1	.1
08646 HI	147.7	5.94	99.8	6.4	3.8	2.6	1.46	10.1	8.0	.1
08647 HI	148.0	5.68	109.4	6.9	4.1	2.8	1.46	10.4	6.9	.0
08648 H2,SL	146.3	6.46	103.6	6.1	2.6	3.5	.74	10.4	9.6	.1
08649	147.0	5.81	103.6	6.3	3.6	2.7	1.33	10.6	8.3	.1
08650	153.4	5.89	105.3	6.3	4.0	2.3	1.74	10.9	7.5	.0
08651	146.4	5.47	102.5	6.0	3.7	2.3	1.61	10.4	6.7	.0
MEAN	148.5	5.91	104.4	6.4	3.7	2.7	1.43	10.4	7.6	.0
S.D.	2.26	.281	2.76	.35	.43	.37	.276	.27	.86	.05

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WEEK: 013

MALES

RAT

WEEK: 013

MALES

WEEK: 013

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 3	DOSE LEVEL: 200	DOSE UNIT: MG/KG								
08682	150.7	5.94	104.8	6.9	4.2	2.7	1.56	10.6	7.4	.1
08683	149.5	6.04	104.8	6.4	4.0	2.4	1.67	10.3	7.8	.1
08684	147.2	6.27	102.9	6.4	3.8	2.6	1.46	10.6	7.7	.2
08685	148.0	6.26	103.4	6.4	3.7	2.7	1.37	10.3	7.4	.0
08686	148.6	5.85	106.3	6.1	3.8	2.3	1.65	9.8	6.4	.0
08687	150.6	5.91	108.7	6.5	4.0	2.5	1.68	10.6	8.2	.1
08688	148.3	5.92	103.0	6.2	3.5	2.7	1.30	9.6	6.9	.0
08689	148.3	6.09	102.9	7.1	4.1	3.0	1.37	10.7	7.7	.1
08690	149.8	6.35	104.2	6.2	3.9	2.3	1.70	10.4	7.9	.2
08691	150.9	5.66	103.7	7.2	4.1	3.1	1.32	10.8	7.1	.0
MEAN	149.2	6.03	104.5	6.5	3.9	2.6	1.50	10.4	7.4	.1
S.D.	1.29	.216	1.84	.39	.21	.27	.154	.39	.53	.08
GROUP: 4	DOSE LEVEL: 800	DOSE UNIT: MG/KG								
08723	148.5	6.61	106.0	6.7	3.9	2.8	1.39	10.8	9.2	.0
08724	150.8	6.84	106.7	6.3	3.8	2.5	1.52	10.4	8.0	.0
08726	150.7	6.13	103.7	7.1	4.1	3.0	1.37	10.8	8.2	.1
08727	147.5	6.34	103.4	6.3	3.7	2.6	1.42	9.9	7.4	.0
08728	148.8	6.18	103.4	6.5	4.0	2.5	1.60	10.3	7.8	.0
08730	151.9	6.28	106.0	6.8	4.0	2.8	1.43	10.7	8.1	.0
08731	148.8	6.57	101.7	7.6	4.1	3.5	1.17	10.8	8.1	.0
08732	149.2	6.37	104.2	6.8	4.1	2.7	1.52	10.6	7.9	.0
08733	147.0	6.06	105.6	6.4	3.9	2.5	1.56	10.9	7.4	.0
08734	145.9	6.10	104.1	6.8	4.1	2.7	1.52	11.3	8.3	.0
MEAN	148.9	6.35	104.5	6.7	4.0	2.8	1.45	10.6	8.0	.0
S.D.	1.85	.255	1.55	.40	.14	.31	.124	.38	.51	.03

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RAT

MALES

WEEK: 013

PAGE: 1

APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 1	DOSE LEVEL: 0							
	DOSAGE UNIT: MG/KG							
08602	11	.8	115	87	66	26	73	149
08603	10	.6	135	69	52	22	86	104
08604	16	.5	130	82	60	27	75	292
08605	17	.6	126	114	66	31	90	103
08606	10	.5	100	83	48	27	62	137
08607	12	.6	103	40	59	28	62	105
08608 H1	15	.5	116	61	46	21	53	69
08609	15	.7	112	74	53	20	98	69
08610	9	.7	126	55	58	25	68	407
08611	11	.6	141	67	61	35	70	229
MEAN	13	.6	120	73	57	26	74	166
S.D.	2.9	.10	13.5	20.2	7.0	4.6	14.0	110.3
GROUP: 2	DOSE LEVEL: 100							
	DOSAGE UNIT: MG/KG							
08642	11	.7	114	85	67	26	72	151
08643 H1	12	.5	109	56	45	25	61	73
08644	13	.6	120	59	49	24	57	53
08645	15	.6	103	59	63	23	61	117
08646 H1	10	.5	88	93	53	24	77	122
08647 H1	12	.5	160	93	65	23	50	560
08648 H2,SL	52	1.4	91	430	35	24	72	125
08649	11	.6	128	63	51	23	95	112
08650	10	.7	116	47	47	22	84	40
08651	7	.6	112	58	53	23	81	124
MEAN	15	.7	114	104	53	24	71	148
S.D.	13.1	.27	20.3	115.6	9.9	1.2	13.8	149.1

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WEEK: 013

MALES

RAT

GLUCOSE

CREAT

BUN

ANIMAL
NUMBER

APPENDIX 7

INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 3	DOSE LEVEL: 200							
	DOSAGE UNIT: MG/KG							
08682	12	.7	116	111	52	26	84	56
08683	10	.6	109	50	50	20	74	104
08684	12	.5	135	75	52	29	87	158
08685	11	.6	103	59	52	21	80	133
08686	13	.6	115	49	56	25	62	207
08687	11	.7	111	67	56	22	72	226
08688	15	.6	90	63	61	31	73	138
08689	11	.5	125	80	50	17	72	61
08690	8	.6	113	70	50	23	78	87
08691	11	.7	116	79	56	24	78	97
MEAN	11	.6	113	70	54	24	76	127
S.D.	1.8	.07	12.0	18.0	3.6	4.2	7.1	57.5
GROUP: 4	DOSE LEVEL: 800							
	DOSAGE UNIT: MG/KG							
08723	9	.6	109	117	51	22	47	221
08724	9	.6	105	58	62	32	80	114
08726	9	.5	105	100	55	28	95	59
08727 HI	12	.5	100	100	53	25	71	114
08728	12	.6	83	81	61	31	91	89
08730	10	.7	97	89	67	28	69	132
08731	23	.6	98	101	62	35	105	98
08732	10	.6	101	102	50	20	67	101
08733	8	.6	132	90	52	29	56	180
08734	9	.7	109	113	50	24	62	206
MEAN	11	.6	104	95	56	27	74	131
S.D.	4.4	.07	12.4	16.9	6.1	4.7	18.3	53.4

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WEEK: -01

FEMALES

RAT

S2399110

POTAS

CHLORIDE

MMOL/L

APPENDIX 7

INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 5	DOSE LEVEL: BASELINE									
08767 H2	143.2	8.02	106.4	5.2	3.6	1.6	2.25	10.2	11.0	.0
08768	143.5	6.21	105.1	5.4	3.6	1.8	2.00	10.9	11.1	.0
08769	143.4	5.74	102.3	5.2	3.5	1.7	2.06	11.0	10.4	.0
08770	145.7	5.63	106.9	5.8	4.0	1.8	2.22	11.3	9.7	.0
08771 H1	144.1	6.23	105.0	5.5	3.8	1.7	2.24	10.9	10.2	.0
MEAN	144.0	6.37	105.1	5.4	3.7	1.7	2.15	10.9	10.5	.0
S.D.	1.02	.963	1.79	.25	.20	.08	.116	.40	.58	.00

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LOH U/L
GROUP: 5	DOSE LEVEL: BASELINE DOSAGE UNIT:							
08767 H2	16	QNS	101	67	385	57	140	767
08768	16	.7	103	102	109	28	167	634
08769	13	.6	101	162	76	26	196	469
08770	13	.6	104	108	84	22	122	544
08771 H1	15	.5	97	103	163	40	267	547
MEAN	15	.6	101	108	163	35	178	592
S.D.	1.5	.08	2.7	34.1	128.5	14.2	56.9	113.8

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RAT

FEMALES

WEEK: 005

PAGE: 1

APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 1	DOSE LEVEL: 0									
	DOSAGE UNIT: MG/KG									
08622 HI	144.9	5.97	107.2	6.9	4.3	2.6	1.65	10.3	8.7	.0
08623	145.2	6.60	106.3	7.3	4.4	2.9	1.52	10.6	8.4	.0
08624 HI,SL	143.1	6.41	106.9	6.3	3.1	3.2	.97	10.9	9.2	.0
08625 HI	146.0	6.56	110.0	6.1	3.8	2.3	1.65	10.3	9.0	.0
08626	142.4	6.20	106.6	6.8	4.0	2.8	1.43	9.8	7.5	.0
08627	145.9	5.83	110.7	6.7	4.3	2.4	1.79	10.4	8.6	.1
08628 HI,SL	142.6	5.86	104.5	6.1	3.0	3.1	.97	11.4	7.2	.2
08629	141.3	6.09	107.7	6.9	4.4	2.5	1.76	10.5	7.2	.1
08630 HI	145.6	6.66	110.5	7.0	4.2	2.8	1.50	10.5	8.0	.1
08631 HI	143.8	5.12	108.2	7.0	4.1	2.9	1.41	10.0	8.5	.1
MEAN	144.1	6.13	107.9	6.7	4.0	2.8	1.46	10.5	8.2	.1
S.D.	1.67	.469	2.01	.41	.51	.30	.291	.45	.72	.07
GROUP: 2	DOSE LEVEL: 100									
	DOSAGE UNIT: MG/KG									
08662 HI	142.5	5.07	108.4	6.7	4.2	2.5	1.68	9.9	7.6	.2
08663	141.0	5.50	105.6	6.4	3.9	2.5	1.56	9.9	7.5	.1
08664 HI	146.2	6.44	108.5	7.0	4.3	2.7	1.59	10.7	8.4	.0
08665 HI	142.3	5.53	106.4	6.8	4.2	2.6	1.62	10.4	7.0	.1
08666 HI	149.5	6.51	112.2	6.6	4.0	2.6	1.54	10.4	10.3	.0
08667	144.7	6.04	107.6	6.5	4.3	2.2	1.95	10.6	8.6	.0
08668	146.6	6.26	106.9	6.3	4.0	2.3	1.74	10.5	9.6	.0
08669	147.0	6.31	106.8	7.5	4.8	2.7	1.78	10.9	8.0	.1
08670 HI	143.3	5.62	109.0	6.4	4.0	2.4	1.67	9.9	7.5	.1
08671 HI	142.5	5.85	106.4	6.8	4.2	2.6	1.62	10.6	8.0	.1
MEAN	144.6	5.91	107.8	6.7	4.2	2.5	1.67	10.4	8.3	.1
S.D.	2.69	.477	1.89	.36	.26	.17	.123	.36	1.02	.07

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 3	DOSE LEVEL: 200 DOSAGE UNIT: MG/KG									
08702 HI	144.5	6.44	109.5	6.5	4.2	2.3	1.83	9.8	9.8	.0
08703 HI	147.9	6.90	108.4	7.1	4.3	2.8	1.54	11.1	9.2	.1
08704 HI	146.2	7.11	107.2	6.7	3.9	2.8	1.39	10.6	9.8	.0
08706	143.4	5.82	107.9	7.1	4.2	2.9	1.45	10.1	8.4	.0
08707 II2	145.2	5.85	109.8	6.6	4.4	2.2	2.00	10.4	9.9	.0
08708	146.4	6.25	108.2	6.7	3.9	2.8	1.39	10.4	7.4	.1
08709 HI	144.0	5.59	110.0	6.2	3.7	2.5	1.48	9.0	8.2	.1
08710 HI	146.6	6.51	108.5	7.1	4.4	2.7	1.63	10.6	8.2	.2
08711 HI	143.1	6.85	106.8	7.1	4.4	2.7	1.63	10.7	9.2	.1
08712 HI	143.0	6.19	106.6	6.8	4.1	2.7	1.52	10.5	9.1	.1
MEAN	145.0	6.35	108.3	6.8	4.1	2.6	1.59	10.3	8.9	.1
S.D.	1.69	.506	1.21	.31	.25	.23	.197	.58	.84	.07
GROUP: 4	DOSE LEVEL: 800 DOSAGE UNIT: MG/KG									
08742	140.2	5.36	106.4	6.5	4.1	2.4	1.71	10.1	8.3	.1
08743 HI,SL	141.6	5.76	103.0	6.6	2.8	3.8	.74	11.8	11.6	.2
08744 HI	147.6	6.32	109.5	7.0	4.4	2.6	1.69	11.3	10.5	.0
08745	142.2	5.68	103.8	6.9	4.4	2.5	1.76	10.7	8.5	.1
08746 HI	145.0	5.81	109.3	6.7	4.1	2.6	1.58	10.4	10.9	.0
08747 HI	142.9	5.49	108.2	6.4	4.3	2.1	2.05	10.1	8.5	.0
08748	146.5	7.29	109.8	7.0	4.4	2.6	1.69	10.7	9.7	.1
08749 III	145.1	7.09	107.2	7.5	4.7	2.8	1.68	11.2	9.4	.1
08750 HI	147.7	6.77	111.5	6.6	4.3	2.3	1.87	10.8	10.8	.1
08751 HI	143.9	6.48	106.9	6.8	4.3	2.5	1.72	10.7	8.6	.1
MEAN	144.3	6.20	107.6	6.8	4.2	2.6	1.65	10.8	9.7	.1
S.D.	2.56	.685	2.68	.32	.51	.46	.344	.53	1.20	.06

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WEEK: 005

FEMALES

RAT

GLUCOSE

CREAT

BUN

ANIMAL

APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 1	DOSE LEVEL: 0			DOSAGE UNIT: MG/KG				
08622 HI	16	.7	91	86	98	29	87	586
08623	15	.7	111	88	85	25	84	227
08624 HI,SL	25	.5	82	316	56	26	54	347
08625 HI	22	.5	81	79	85	31	70	587
08626	18	.7	89	82	79	27	53	530
08627	19	.7	94	72	103	30	94	852
08628 HI,SL	19	.5	72	410	50	30	32	407
08629	13	.6	92	105	84	26	91	624
08630 HI	15	.6	95	92	90	28	88	370
08631 HI	13	.7	102	91	97	26	88	503
MEAN	18	.6	91	142	83	28	74	503
S.D.	3.9	.09	11.0	118.8	17.4	2.1	21.0	175.9
GROUP: 2	DOSE LEVEL: 100			DOSAGE UNIT: MG/KG				
08662 HI	16	.7	89	89	102	29	150	635
08663	17	.8	116	86	124	31	129	785
08664 HI	14	.6	97	106	82	21	67	753
08665 HI	21	.6	102	86	104	27	124	829
08666 HI	13	.7	77	76	93	30	78	407
08667	13	.6	101	104	89	20	92	799
08668	10	.6	86	80	97	22	128	828
08669	11	.6	91	96	95	36	99	440
08670 HI	15	.6	89	72	70	17	63	499
08671 HI	14	.6	117	103	90	29	120	455
MEAN	14	.6	97	90	95	26	105	643
S.D.	3.1	.07	12.8	12.1	14.3	5.9	29.5	175.9

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 3	DOSE LEVEL: 200 DOSAGE UNIT: MG/KG							
08702 HI	15	.6	85	86	114	37	125	613
08703 HI	14	.7	76	103	110	39	101	530
08704 HI	15	.6	86	134	92	32	98	626
08706	14	.7	71	101	89	30	161	531
08707 H2	16	.6	83	81	94	26	97	712
08708	12	.6	92	67	97	28	176	567
08709 HI	10	.7	84	91	114	21	102	1210
08710 HI	10	.6	94	112	87	25	90	413
08711 HI	10	.6	87	83	90	27	70	624
08712 HI	23	.6	75	118	101	26	76	1070
MEAN	14	.6	83	100	99	29	110	690
S.D.	3.9	.05	7.4	17.4	10.4	5.5	34.6	252.2
GROUP: 4	DOSE LEVEL: 800 DOSAGE UNIT: MG/KG							
08742	12	.6	115	108	66	24	86	344
08743 HI, SL	38	1.3	83	526	58	32	46	281
08744 HI	17	.6	83	119	85	36	86	265
08745	18	.6	114	126	87	39	146	546
08746 HI	14	.7	55	121	113	35	124	469
08747 HI	12	.6	97	119	83	26	89	816
08748	14	.5	80	118	137	40	192	740
08749 HI	12	.6	94	111	93	43	99	443
08750 HI	15	.7	66	104	97	34	65	465
08751 HI	12	.6	97	124	85	39	109	389
MEAN	16	.7	88	158	90	35	104	476
S.D.	7.9	.23	19.1	129.6	22.4	6.1	41.8	182.3

APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 1	DOSE LEVEL: 0			DOSAGE UNIT: MG/KG						
08622	148.2	5.90	106.0	6.5	4.2	2.3	1.83	10.4	7.2	.1
08623	146.1	5.72	105.3	6.7	4.3	2.4	1.79	10.2	5.9	.0
08624	153.1	5.64	109.6	6.6	2.9	3.7	.78	10.9	8.1	.2
08625	147.5	5.64	103.7	6.8	4.6	2.2	2.09	11.0	6.5	.0
08626	145.7	5.92	104.4	7.4	4.9	2.5	1.96	10.7	5.8	.1
08627 H1	147.6	5.43	106.2	6.7	4.4	2.3	1.91	10.1	4.9	.1
08628 H2	144.6	5.43	105.8	6.3	2.6	3.7	.70	10.9	7.0	.1
08629	144.5	6.19	104.2	7.3	4.6	2.7	1.70	11.1	7.7	.1
08630	145.1	5.94	104.2	6.9	4.5	2.4	1.88	11.1	7.1	.2
08631	146.1	6.10	108.5	6.5	3.7	2.8	1.32	10.3	7.4	.0
MEAN	146.9	5.79	105.8	6.8	4.1	2.7	1.60	10.7	6.8	.1
S.D.	2.54	.262	1.93	.35	.77	.56	.495	.39	.98	.07
GROUP: 2	DOSE LEVEL: 100			DOSAGE UNIT: MG/KG						
08662	145.5	5.62	106.5	6.9	4.7	2.2	2.14	10.7	6.6	.1
08664	148.5	6.31	104.2	7.4	4.7	2.7	1.74	11.3	6.7	.1
08665	148.9	5.80	104.2	7.4	4.6	2.8	1.64	11.1	5.5	.1
08666 H1	146.9	5.44	106.2	7.0	4.4	2.6	1.69	10.4	4.4	.0
08667 H1	147.1	6.04	102.7	7.5	4.7	2.8	1.68	11.0	6.1	.1
08668	149.0	5.93	104.9	6.7	4.2	2.5	1.68	10.9	7.3	.0
08669	147.7	6.10	103.4	7.3	4.7	2.6	1.81	10.7	6.3	.0
08670 H1	148.6	6.26	103.9	7.0	4.3	2.7	1.59	10.6	7.5	.1
08671	144.9	5.99	109.6	6.8	4.1	2.7	1.52	10.7	7.3	.0
08672	145.5	5.52	105.3	6.6	4.0	2.6	1.54	11.0	7.7	.0
MEAN	147.3	5.90	105.1	7.1	4.4	2.6	1.70	10.8	6.5	.0
S.D.	1.53	.300	1.98	.32	.28	.18	.177	.27	1.02	.05

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RAT

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	SODIUM MMOL/L	POTAS MMOL/L	CHLORIDE MMOL/L	T PROT G/DL	ALBUMIN G/DL	GLOBULIN G/DL	A/G RATIO	CALCIUM MG/DL	IN PHOS MG/DL	T BILI MG/DL
GROUP: 3	DOSE LEVEL: 200									
	DOSAGE UNIT: MG/KG									
08702	145.2	5.49	107.6	6.7	4.5	2.2	2.05	10.5	7.1	.0
08703	146.3	6.48	107.4	6.8	4.2	2.6	1.62	11.0	7.8	.1
08704	145.6	6.50	106.0	7.2	4.3	2.9	1.48	11.1	6.1	.1
08707 HI	146.0	5.37	107.2	6.4	4.2	2.2	1.91	10.4	7.6	.0
08708	148.9	5.99	105.8	7.0	4.1	2.9	1.41	10.8	6.9	.0
08709	148.8	5.84	107.8	6.8	4.1	2.7	1.52	10.3	6.6	.1
08710	148.2	5.46	103.4	7.3	4.5	2.8	1.61	10.6	6.8	.0
08711	150.4	6.52	105.6	7.5	4.7	2.8	1.68	10.9	8.0	.1
08712	148.1	6.22	102.9	7.2	4.6	2.6	1.77	11.4	7.0	.2
08713	148.0	5.85	108.3	6.9	4.2	2.7	1.56	10.8	6.6	.0
MEAN	147.5	5.97	106.2	7.0	4.3	2.6	1.66	10.8	7.1	.1
S.D.	1.69	.446	1.85	.33	.22	.25	.199	.34	.59	.07
GROUP: 4	DOSE LEVEL: 800									
	DOSAGE UNIT: MG/KG									
08742	145.6	5.99	103.9	6.4	4.2	2.2	1.91	10.6	6.6	.0
08744	146.1	5.91	101.2	6.9	4.4	2.5	1.76	10.6	6.8	.0
08746	146.4	6.23	103.9	7.0	4.4	2.6	1.69	11.0	6.7	.1
08747	145.3	5.67	108.1	6.9	4.5	2.4	1.88	10.5	8.0	.0
08748 HI	146.7	5.89	110.8	6.9	4.3	2.6	1.65	10.9	7.9	.0
08749	147.4	5.94	104.6	6.8	4.3	2.5	1.72	10.7	7.1	.1
08750	147.9	6.04	106.9	6.7	4.2	2.5	1.68	10.4	7.0	.0
08751 HI	151.6	6.21	106.0	6.9	4.3	2.6	1.65	11.2	6.5	.0
08752	148.1	5.80	105.5	6.3	4.0	2.3	1.74	11.1	7.4	.0
08753	150.1	5.75	112.1	6.6	3.9	2.7	1.44	11.2	7.4	.0
MEAN	147.5	5.94	106.3	6.7	4.2	2.5	1.71	10.8	7.1	.0
S.D.	2.01	.183	3.31	.24	.18	.15	.131	.30	.53	.04

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RAT

FEMALES

WEEK: 013

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APPENDIX 7
INDIVIDUAL CLINICAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	HUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 1	DOSE LEVEL: 0	DOSAGE UNIT: MG/KG						
08622	16	.6	111	60	56	18	41	268
08623	11	.6	115	86	50	22	35	87
08624	45	1.1	77	456	40	21	37	114
08625	15	.6	99	86	51	34	37	57
08626	15	.7	118	75	43	23	37	71
08627 H1	15	.7	98	81	54	18	44	173
08628 H2	31	.8	86	520	43	22	20	112
08629	12	.7	98	96	77	39	56	364
08630	15	.6	104	89	46	22	41	88
08631	7	.6	126	89	64	19	45	260
MEAN	18	.7	103	164	52	24	39	159
S.D.	11.3	.16	14.9	171.8	11.2	7.0	9.1	103.8
GROUP: 2	DOSE LEVEL: 100	DOSAGE UNIT: MG/KG						
08662	17	.6	110	98	57	23	64	106
08664	12	.6	100	104	46	22	49	79
08665	13	.8	99	85	71	22	58	145
08666 H1	15	.7	109	81	57	29	32	76
08667 H1	14	.6	110	114	58	53	75	92
08668	14	.7	100	90	47	20	55	63
08669	10	.6	98	89	45	18	44	166
08670 H1	13	.6	94	79	50	18	35	97
08671	10	.7	155	105	60	22	81	146
08672	11	.7	122	72	62	28	41	150
MEAN	13	.7	110	92	55	26	53	112
S.D.	2.2	.07	17.9	13.3	8.3	10.3	16.4	36.6

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RAT

FEMALES

WEEK: 013

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APPENDIX 7
INDIVIDUAL INITIAL CHEMISTRY VALUES
SUBCHRONIC TOXICITY STUDY IN RATS

ANIMAL NUMBER	BUN MG/DL	CREAT MG/DL	GLUCOSE MG/DL	T CHOL MG/DL	AST U/L	ALT U/L	ALK P U/L	LDH U/L
GROUP: 3	DOSE LEVEL: 200							
	DOSAGE UNIT: MG/KG							
08702	10	.6	137	87	61	27	68	138
08703	13	.6	126	83	64	25	49	217
08704	14	.8	152	112	97	37	52	353
08707 HI	14	.5	119	84	67	23	44	414
08708	14	.6	108	75	54	29	74	49
08709	12	.6	116	103	57	18	83	174
08710	11	.6	111	96	45	16	41	87
08711	12	.7	97	68	57	20	42	145
08712	10	.6	88	111	63	24	29	261
08713	8	.7	128	68	51	20	41	89
MEAN	12	.6	117	89	62	24	52	193
S.D.	2.0	.08	19.4	16.3	14.1	6.1	17.1	119.3
GROUP: 4	DOSE LEVEL: 800							
	DOSAGE UNIT: MG/KG							
08742	11	.7	115	97	49	23	31	44
08744	15	.6	110	99	54	36	34	82
08746	14	.7	90	110	56	32	80	86
08747	14	.5	117	87	62	21	51	354
08748 HI	17	.6	128	97	59	31	72	141
08749	7	.6	101	91	53	25	43	66
08750	11	.7	95	109	50	24	30	64
08751 HI	9	.7	90	138	51	26	25	80
08752	8	.7	99	134	57	28	44	265
08753	10	.6	131	99	47	31	42	67
MEAN	12	.6	108	106	54	28	45	125
S.D.	3.3	.07	14.9	17.3	4.7	4.7	18.1	102.6



HAZLETON

LABORATORIES AMERICA, INC.
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HLA 2399-110

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APPENDIX 8

Individual Animal Summary Report

Note: Due to computer limitations, organ-to-brain-weight ratios are presented in this appendix, even though they were not required by protocol. These data were not evaluated and will not be referred to in the text of the report.

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08602 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 487.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 8:46 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATISTICS
ADRENAL (AD)	.065	.0133 %	.0290	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.24	.459 %	1.000	WEIGHT TAKEN
HEART (HT)	1.50	.307 %	.669	WEIGHT TAKEN
SPLEEN (SP)	.58	.119 %	.260	WEIGHT TAKEN
KIDNEY (KD)	3.28	.673 %	1.467	WEIGHT TAKEN
LIVER (LI)	10.46	2.146 %	4.675	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.15	1.056 %	2.301	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT):
-INFLAMMATION, SUBACUTE,-SLIGHT
KIDNEY (KD):
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LACRIMAL GL, EXO (EO):
-INFLAMMATION, SUBACUTE,-MINIMAL
-DEGENERATION,-MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LUNG (LU):
-INFLAMMATION, SUBACUTE,-MINIMAL
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MODERATE
PARATHYROID (PT):
>SECTION EXAMINED; TISSUE NOT PRESENT
PROSTATE (PR):
-LUMEN, DEBRIS, CELLULAR,-SLIGHT
-INFLAMMATION, SUBACUTE,-MINIMAL

APPENDIX B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08602 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 487.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 8:46 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SU), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT STUDY NUMBER: 2399110

ANIMAL NUMBER: B08603 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 508.0 GRAMS
 DATE AND TIME OF NECROPSY: 07/21/86 10:40 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
 POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.058	.0115 %	.0260	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.25	.443 %	1.000	WEIGHT TAKEN
HEART (HT)	1.63	.321 %	.726	WEIGHT TAKEN
SPLEEN (SP)	1.28	.251 %	.568	WEIGHT TAKEN
KIDNEY (KD)	3.62	.712 %	1.609	WEIGHT TAKEN
LIVER (LI)	13.88	2.732 %	6.174	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.94	1.169 %	2.641	WEIGHT TAKEN

CLINICAL OBSERVATIONS	PATHOLOGY OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	GENERAL INFORMATION (XX): >NOTE:>EXTERNAL OBSERVATIONS:NONE	EYE (EY): -OPTIC NERVE, FOCAL DEGENERATION, -SLIGHT KIDNEY (KD): -FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL LACRIMAL GL, EXO (EO): -INFLAMMATION, SUBACUTE, -SLIGHT LIVER (LI): -PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL LUNG (LU): -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL -INTRA-ALVEOLAR MACROPHAGES, -SLIGHT MAMMARY GLAND (MG): >SECTION EXAMINED; TISSUE NOT PRESENT MAND SALIVARY GL (SG): -FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL PROSTATE (PR): -LUMEN, DEBRIS, CELLULAR, -MINIMAL -INFLAMMATION, SUBACUTE, -SLIGHT

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08603 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 508.0 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:40 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI),
RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08604 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 531.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:55 PROSECTOR: KIM LINCOLN RECORDED: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.076	.0142 %	.0336	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.25	.423 %	1.000	WEIGHT TAKEN
HEART (HT)	1.40	.264 %	.624	WEIGHT TAKEN
SPLEEN (SP)	.88	.166 %	.393	WEIGHT TAKEN
KIDNEY (KO)	2.97	.558 %	1.318	WEIGHT TAKEN
LIVER (LI)	13.11	2.466 %	5.825	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.73	1.077 %	2.544	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
KIDNEY (KO) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-TUBULE, MINERALIZATION,-MINIMAL
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LUNG (LU) :
-INFLAMMATION, SUBACUTE,-SLIGHT
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MODERATE

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08604 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 531.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:55 PROSECTOR: KIM LINCOLN REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

P A T H O L O G Y O B S E R V A T I O N S (CONTINUED)

CLINICAL OBSERVATIONS

HISTOPATHOLOGY

PROSTATE (PR) :
- INFLAMMATION, SUBACUTE, -MODERATELY
SEVERE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (ED), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (ED), LN, MESENTERIC (MS),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA),
PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08605 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: UNSCHEDULED (M)
DATE OF DEATH: 07/17/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 418.6 GRAMS
DATE AND TIME OF NECROPSY: 07/17/86 11:45 PROSECTOR: TIM GROVE RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-EAR TAG MISSING

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CECUM (CE) :
-LUMEN, GAS
-DISTENDED; MODERATELY
COLON (CO) :
-LUMEN, GAS
DUODENUM (DU) :
-LUMEN, GAS
ILEUM (IL) :
-LUMEN, GAS
JEJUNUM (JE) :
-LUMEN, GAS
LIVER (LI) :
-PALE; ALL LOBES
NASAL TURBINATE (NT) :
-FRACTURE; ANTERIOR TO HARD PALATE
STOMACH, NONGL (SU) :
-LUMEN, GAS
-DISTENDED; SLIGHTLY
GENERAL INFORMATION (XX) :
>NOTE:>REASON FOR SACRIFICE AND
EXTERNAL
OBSERVATIONS: MALOCCLUSION,
DYSPNEA, ROUGH HAIRCOAT, BOTH
EYES-CHROMODACRYORRHEA, ENTIRE
BODY-THIN, LANGUID

HISTOPATHOLOGY

CECUM (CE) :
>UNREMARKABLE
COLON (CO) :
>UNREMARKABLE
DUODENUM (DU) :
>UNREMARKABLE
HEART (HT) :
-INFLAMMATION, SUBACUTE, -MODERATE
ILEUM (IL) :
>UNREMARKABLE
JEJUNUM (JE) :
>UNREMARKABLE
LIVER (LI) :
-FATTY CHANGE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
NASAL TURBINATE (NT) :
-HEMORRHAGE, -PRESENT
-GRANULATION TISSUE, -PRESENT
PARATHYROID (PT) :
>SECTION EXAMINED; TISSUE NOT PRESENT
STOMACH, NONGL (SU) :
>UNREMARKABLE
THYMUS (TH) :
-ATROPHY, -MODERATE
URINARY BLADDER (UB) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
SLIGHT

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08605 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: UNSCHEDULED (M)
DATE OF DEATH: 07/17/86 STUDY DAY OF DEATH: 92 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 418.6 GRAMS
DATE AND TIME OF NECROPSY: 07/17/86 11:45 PROSECTOR: TIM GROVE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHTER: NOT REQUIRED BY PROTOCOL

STUDY NUMBER: 2399110

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), EPIDIDYMIS (EP), ESOPHAGUS (ES),
EYE (EY), HEART (HT), KIDNEY (KD), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), TESTIS (TE), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), EPIDIDYMIS (EP), ESOPHAGUS (ES),
EYE (EY), KIDNEY (KD), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), PROSTATE (PR),
RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), TESTIS (TE), THYROID (TY), TRACHEA (TR)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08606 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 440.2 GRAMS
 DATE AND TIME OF NECROPSY: 07/21/86 13:30 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
 POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.065	.0147 %	.0290	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.24	.509 %	1.000	WEIGHT TAKEN
HEART (HT)	1.14	.259 %	.509	WEIGHT TAKEN
SPLEEN (SP)	.84	.191 %	.375	WEIGHT TAKEN
KIDNEY (KD)	2.98	.676 %	1.329	WEIGHT TAKEN
LIVER (LI)	9.92	2.254 %	4.430	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.25	1.193 %	2.346	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS
 NECROPSY

CLINICAL OBSERVATIONS

-MALOCCLUSION

LIVER (LI):

-H-DARK AREA; MEDIAN LOBE, ONE, 1 X 1 CM, DARK RED
 GENERAL INFORMATION (XX):
 >NOTE: >EXTERNAL OBSERVATIONS: NONE.
 (MALOCCLUSION, NOT RECOGNIZED AT NECROPSY)

HISTOPATHOLOGY

ADRENAL, CORTEX (AC):
 -HYPERTROPHY, -SLIGHT EPIDIDYMIS (EP):
 -FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
 LIVER (LI):
 -PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
 LUNG (LU):
 -INFLAMMATION, SUBACUTE, -MINIMAL
 -PERIBRONCHIAL/PERIVASCULAR INFILTRATION, LYMPHOID, -MINIMAL
 PROSTATE (PR):
 -LUMEN, DEBRIS, CELLULAR, -MINIMAL
 -INFLAMMATION, SUBACUTE, -MODERATE

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08606 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 440.2 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 13:30 PROSECTOR: BARBARA DAY REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08607 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 445.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:12 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEAHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.051	.0114 %	.0230	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.21	.495 %	1.000	WEIGHT TAKEN
HEART (HT)	1.27	.284 %	.574	WEIGHT TAKEN
SPLEEN (SP)	.75	.169 %	.341	WEIGHT TAKEN
KIDNEY (KD)	2.92	.654 %	1.321	WEIGHT TAKEN
LIVER (LI)	11.44	2.565 %	5.179	WEIGHT TAKEN
TESTIS/EPIDID (TP)	6.43	1.443 %	2.912	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-RIGHT EYE-OPAQUE

EYE (EY) :

-EXTERNAL, OPAQUE; RIGHT

KIDNEY (KD) :

-PELVIS, DILATED; RIGHT, MODERATELY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:RIGHT EYE-

OPAQUE

HISTOPATHOLOGY

ADRENAL, CORTEX (AC) :

-FOCAL FATTY CHANGE,-MINIMAL

EPIDIDYMIS (EP) :

-FOCAL MONONUCLEAR CELL INFILTRATE,-

SLIGHT

EYE (EY) :

-LENS, DEGENERATION,-PRESENT

-RETINA, DEGENERATION,-PRESENT

-SYNECHIA, POSTERIOR,-PRESENT

HEART (HT) :

-INFLAMMATION, SUBACUTE,-SLIGHT

KIDNEY (KD) :

-PELVIS, DILATATION,-MODERATE

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

-INFLAMMATION, SUBACUTE,-SLIGHT

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

PANCREAS (PA) :

-INDIVIDUAL CELL DEGENERATION/NECROSIS,-

MINIMAL

APPENDIX B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08607 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 445.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:12 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

P A T H O L O G Y O B S E R V A T I O N S (CONTINUED)

CLINICAL OBSERVATIONS

HISTOPATHOLOGY

PARATHYROID (PT) :

-UNILATERALLY EXAMINED,-PRESENT

PROSTATE (PR) :

-LUMEN, DEBRIS, CELLULAR,-MINIMAL

THYMUS (TH) :

-EPITHELIAL EMBRYONIC REST,-PRESENT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), ILEUM (IL),
JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SU),
SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT
STUDY NUMBER: 2399110

ANIMAL NUMBER: B08608
SEX: MALE
DOSE GROUP: 1
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86
STUDY DAY OF DEATH: 97
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 505.0 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:22
PROSECTOR: LINDA RUMBLE
RECORDED: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.073	.0145 %	.0322	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.27	.450 %	1.000	WEIGHT TAKEN
HEART (HT)	1.70	.336 %	.746	WEIGHT TAKEN
SPLEEN (SP)	1.19	.235 %	.522	WEIGHT TAKEN
KIDNEY (KD)	4.20	.832 %	1.849	WEIGHT TAKEN
LIVER (LI)	17.17	3.400 %	7.552	WEIGHT TAKEN
TESTIS/EPIDID (TP)	6.29	1.246 %	2.769	WEIGHT TAKEN

CLINICAL OBSERVATIONS
-RIGHT EYE-OPAQUE
EYE (EY) :
-EXTERNAL, OPAQUE; RIGHT
URINARY BLADDER (UB) :
-H-LUMEN, CALCULUS; ONE, 5 X 3 X 1 MM, YELLOW
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:RIGHT EYE-OPAQUE
HISTOPATHOLOGY
EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
EYE (EY) :
-KERATITIS,-MODERATELY SEVERE
HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PANCREAS (PA) :
-ACUTE HEMORRHAGIC PANCREATITIS,-MODERATE
PROSTATE (PR) :
-LUMEN, OFARIS, CELLULAR,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08608 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 505.0 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:22 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: LINDA RUMBLE

P A T H O L O G Y O B S E R V A T I O N S (CONTINUED)

CLINICAL OBSERVATIONS

HISTOPATHOLOGY

PROSTATE (PR) :
-INFLAMMATION, SUBACUTE,--MINIMAL
URINARY BLADDER (UB) :
-CALCULUS,--PRESENT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PARATHYROID (PT),
PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08609 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 521.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:09 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

--APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MODERATE
-INFLAMMATION, SUBACUTE,-SLIGHT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08609 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 521.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:09 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08610

SEX: MALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/22/86

STUDY DAY OF DEATH: 97

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 453.1 GRAMS

DATE AND TIME OF NECROPSY: 07/22/86 11:18

PROSECTOR: DOUGLAS HERNDON

REORDER: TIM GROVE

POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO GUANDER, DVM, DACVP

WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.060	.0133 %	.0268	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.25	.496 %	1.000	WEIGHT TAKEN
HEART (HT)	1.51	.332 %	.670	WEIGHT TAKEN
SPLEEN (SP)	.84	.186 %	.375	WEIGHT TAKEN
KIDNEY (KD)	2.69	.594 %	1.197	WEIGHT TAKEN
LIVER (LI)	10.46	2.309 %	4.655	WEIGHT TAKEN
TESTIS/EPIDID (TP)	6.02	1.329 %	2.680	WEIGHT TAKEN

CLINICAL OBSERVATIONS

APPEARED NORMAL

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

PATHOLOGY OBSERVATIONS

NECROPSY

HISTOPATHOLOGY

EPIDIDYMIS (EP):

-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

KIDNEY (KD):

-TUBULE, REGENERATION,-MINIMAL

-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

LACRIMAL GL, EXO (EO):

-INFLAMMATION, SUBACUTE,-MINIMAL

LIVER (LI):

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

-INFLAMMATION, SUBACUTE,-SLIGHT LUNG (LU):

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

PANCREAS (PA):

-INDIVIDUAL CELL DEGENERATION/NECROSIS,-MINIMAL

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08610 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 453.1 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:18 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SU), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08611 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 601.3 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:37 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS	P A T H O L O G Y O B S E R V A T I O N S	HISTOPATHOLOGY
-APPEARED NORMAL	^COLLECTED/TAKEN (XW) : -ELECTRON MICROSCOPY SAMPLE; LIVER GENERAL INFORMATION (XX) : >NOTE:>EXTERNAL OBSERVATIONS:NONE	HEART (HT) : -INFLAMMATION, SUBACUTE,-SLIGHT LACRIMAL GL, EXO (EO) : -INFLAMMATION, SUBACUTE,-MINIMAL LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,- MINIMAL -INFLAMMATION, SUBACUTE,-SLIGHT LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-SLIGHT PARATHYROID (PT) : -UNILATERALLY EXAMINED,-PRESENT SEMINAL VESICLE (SV) : -LUMEN, DEBRIS, CELLULAR,-SLIGHT

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08611 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 601.3 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:37 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PANCREAS (PA), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08612 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 526.4 GRAMS
 DATE AND TIME OF NECROPSY: 07/22/86 13:31 PROSECTOR: KIM LINCOLN REORDER: TIM GROVE
 POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.072	.0137 %	.0305	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.36	.448 %	1.000	WEIGHT TAKEN
HEART (HT)	1.48	.281 %	.628	WEIGHT TAKEN
SPLEEN (SP)	.83	.158 %	.353	WEIGHT TAKEN
KIDNEY (KD)	3.61	.685 %	1.529	WEIGHT TAKEN
LIVER (LI)	13.98	2.656 %	5.929	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.71	1.085 %	2.421	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS NECROPSY HISTOPATHOLOGY
 -APPEARED NORMAL GENERAL INFORMATION (XX): EPIDIDYMS (EP):
>NOTE:>EXTERNAL OBSERVATIONS:NONE -FOCAL MONONUCLEAR CELL INFILTRATE,-
 MINIMAL

KIDNEY (KD):
 -FOCAL MONONUCLEAR CELL INFILTRATE,-
 MINIMAL
 LIVER (LI):
 -PORTAL MONONUCLEAR CELL INFILTRATE,-
 MINIMAL
 -INFLAMMATION, SUBACUTE,-MINIMAL
 -FATTY CHANGE,-MINIMAL
 LUNG (LU):
 -PERIBRONCHIAL/PERIVASCULAR,
 INFILTRATION, LYMPHOID,-MINIMAL
 PARATHYROID (PT):
 -UNILATERALLY EXAMINED,-PRESENT
 PROSTATE (PR):
 -LUMEN, DEBRIS, CELLULAR,-MINIMAL
 -INFLAMMATION, SUBACUTE,-MINIMAL

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08612 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 526.4 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 13:31 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08613
DATE OF DEATH: 07/22/86
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 97
PROSECTOR: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

DOSE GROUP: 1
STUDY WEEK OF DEATH: 14
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

TERMINAL BODY WEIGHT: 528.4 GRAMS
REORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

KIDNEY (KD) :

-H-PELVIS, DILATED; RIGHT, MODERATELY.
^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT) :

-INFLAMMATION, SUBACUTE,-SLIGHT
-FIBROSIS,-MODERATE

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-PELVIS, DILATATION,-SLIGHT

LACRIMAL GL, EXO (EO) :

-INFLAMMATION, SUBACUTE,-MINIMAL
-DEGENERATION,-MINIMAL

-UNILATERALLY EXAMINED,-PRESENT

LIVER (LT) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

MAMMARY GLAND (MG) :

>SECTION EXAMINED; TISSUE NOT PRESENT
PARATHYROID (PT) :

>SECTION EXAMINED; TISSUE NOT PRESENT
PROSTATE (PR) :

-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08613 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 528.4 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:50 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA),
PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08614
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 8:34
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

TERMINAL BODY WEIGHT: 553.5 GRAMS

PROSECTOR: BARBARA DAY

REORDER: KIM LINCOLN

WEIGHER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KO) :

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

LACRIMAL GL, EXO (EO) :

-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-SLIGHT

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08614 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 593.5 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:34 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08615 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 406.2 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 14:03 PROSECTOR: BARBARA DAY RECORDED: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.060	.0149 %	.0278	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.17	.535 %	1.000	WEIGHT TAKEN
HEART (HT)	1.31	.322 %	.603	WEIGHT TAKEN
SPLEEN (SP)	.85	.210 %	.392	WEIGHT TAKEN
KIDNEY (KD)	2.96	.729 %	1.363	WEIGHT TAKEN
LIVER (LI)	9.87	2.431 %	4.545	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.35	1.317 %	2.462	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT) :

-INFLAMMATION, SUBACUTE,-MINIMAL

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL

-FOCAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

-INFLAMMATION, SUBACUTE,-SLIGHT

-COAGULATIVE NECROSIS,-SLIGHT

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

PANCREAS (PA) :

-INFLAMMATION, SUBACUTE,-SLIGHT

URINARY BLADDER (UB) :

-FOCAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08615 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 406.2 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 14:03 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08616 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 531.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:14 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.064	.0120 %	.0308	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.08	.392 %	1.000	WEIGHT TAKEN
HEART (HT)	1.33	.250 %	.639	WEIGHT TAKEN
SPLEEN (SP)	.78	.147 %	.375	WEIGHT TAKEN
KIDNEY (KD)	3.49	.657 %	1.678	WEIGHT TAKEN
LIVER (LI)	13.90	2.617 %	6.683	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.67	1.067 %	2.726	WEIGHT TAKEN

CLINICAL OBSERVATIONS PATHOLOGY OBSERVATIONS HISTOPATHOLOGY

---APPEARED NORMAL---

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE, - MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE, -MINIMAL
KIDNEY (KD) :
-TUBULE, REGENERATION, -MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE, - MINIMAL
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE, -MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, - MINIMAL
LUNG (LU) :
-INFLAMMATION, SUBACUTE, -SLIGHT
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL
PANCREAS (PA) :
-INFLAMMATION, SUBACUTE, -MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED, -PRESENT

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808616
SEX: MALE
DOSE GROUP: 1
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86
DEATH: 98
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 531.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:14
PROSECTOR: BARBARA DAY
RECORDED: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: BARBARA DAY
POST-FIX WEAIGHT: NOT REQUIRED BY PROTOCOL

----- PATHOLOGY OBSERVATIONS (CONTINUED) -----

HISTOPATHOLOGY

CLINICAL OBSERVATIONS

PROSTATE (PR) :

-LUMEN, DEBRIS, CELLULAR, -SLIGHT
-INEI ANIMATION. SUBACUTE, -SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:
 ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
 BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
 DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
 LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
 NASAL SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
 PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
 SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
 THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ~COLLECTED/TAKEN (XM)

ALL TUMORS WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PITUITARY (PI), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08617 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 631.3 GRAMS
 DATE AND TIME OF NECROPSY: 07/23/86 9:34 PROSECTOR: DOUGLAS HERNDON REORDER: KIM LINCOLN
 POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.070	.0111 %	.0307	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.28	.361 %	1.000	WEIGHT TAKEN
HEART (HT)	2.08	.329 %	.912	WEIGHT TAKEN
SPLEEN (SP)	1.23	.195 %	.539	WEIGHT TAKEN
KIDNEY (KD)	4.33	.686 %	1.899	WEIGHT TAKEN
LIVER (LI)	17.89	2.834 %	7.846	WEIGHT TAKEN
TESTIS/EPIDID (TP)	6.42	1.017 %	2.816	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

GENERAL INFORMATION (XX) :
 >NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT) :
 -INFLAMMATION, SUBACUTE,-SLIGHT
 KIDNEY (KD) :
 -TUBULE, REGENERATION,-MINIMAL
 -FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
 LACRIMAL GL, EXO (EO) :
 -INFLAMMATION, SUBACUTE,-SLIGHT
 LIVER (LI) :
 -PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
 -INFLAMMATION, SUBACUTE,-MINIMAL
 -FATTY CHANGE,-MINIMAL
 LUNG (LU) :
 -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
 PANCREAS (PA) :
 -INFLAMMATION, SUBACUTE,-SLIGHT
 PARATHYROID (PT) :
 -UNILATERALLY EXAMINED,-PRESENT
 PROSTATE (PR) :
 -LUMEN, DEBRIS, CELLULAR,-MINIMAL
 -INFLAMMATION, SUBACUTE,-MINIMAL

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08617 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 631.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:34 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXD (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYRUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08618
SEX: MALE
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 11:40
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 1
STUDY WEEK OF DEATH: 14
PROSECTOR: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 507.7 GRAMS
RECORDER: KIM LINCOLN
WEIGHER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.068	.0134 %	.0332	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.05	.404 %	1.000	WEIGHT TAKEN
HEART (HT)	1.49	.293 %	.727	WEIGHT TAKEN
SPLEEN (SP)	.93	.183 %	.454	WEIGHT TAKEN
KIDNEY (KD)	3.42	.674 %	1.668	WEIGHT TAKEN
LIVER (LI)	16.57	3.264 %	8.083	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.08	1.001 %	2.478	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE,-SLIGHT
KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08618 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 507.7 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 11:40 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SU), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08619
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 9:52
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 454.3 GRAMS

PROSECTOR: BARBARA DAY

RECORDER: KIM LINCOLN

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :

-ELECTRON MICROSCOPY SAMPLE; LIVER

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

MAMMARY GLAND (MG) :

>SECTION EXAMINED; TISSUE NOT PRESENT

PARATHYROID (PT) :

-UNILATERALLY EXAMINED,-PRESENT

STOMACH, NONGL (SU) :

-ACANTHOSIS,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08619 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 454.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:52 PROSECTOR: BARBARA DAY REORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK),
NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08620 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 583.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 14:00 PROSECTOR: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.062	.0106 %	.0298	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.08	.357 %	1.000	WEIGHT TAKEN
HEART (HT)	1.68	.288 %	.808	WEIGHT TAKEN
SPLEEN (SP)	.94	.161 %	.452	WEIGHT TAKEN
KIDNEY (KO)	3.73	.640 %	1.793	WEIGHT TAKEN
LIVER (LI)	15.16	2.599 %	7.288	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.41	.928 %	2.601	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE,-SLIGHT
KIDNEY (KO) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INTERSTITIUM, FIBROSIS,-MINIMAL
-CYST,-PRESENT
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08620 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 583.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 14:00 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

P A T H O L O G Y O B S E R V A T I O N S (CONTINUED)

CLINICAL OBSERVATIONS

HISTOPATHOLOGY

PARATHYROID (PT):

-UNILATERALLY EXAMINED,-PRESENT

PITUITARY (PI):

-FOCAL VACUOLATION,-SLIGHT

PROSTATE (PR):

-LUMEN, DEBRIS, CELLULAR,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT
STUDY NUMBER: 2399110

ANIMAL NUMBER: B08621
SEX: MALE
DOSE GROUP: 1
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86
STUDY DAY OF DEATH: 98
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 644.4 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 14:22
PROSECTOR: PENNIE PAGE
REORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: PENNIE PAGE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.071	.0110 %	.0301	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.36	.366 %	1.000	WEIGHT TAKEN
HEART (HT)	2.15	.334 %	.911	WEIGHT TAKEN
SPLEEN (SP)	.94	.146 %	.398	WEIGHT TAKEN
KIDNEY (KO)	3.84	.596 %	1.627	WEIGHT TAKEN
LIVER (LI)	17.35	2.692 %	7.352	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.91	.917 %	2.504	WEIGHT TAKEN

CLINICAL OBSERVATIONS
-APPEARED NORMAL
P A T H O L O G Y O B S E R V A T I O N S
NECROPSY
HISTOPATHOLOGY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE
EPIDIDYMS (EP) :
-FUCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
KIDNEY (KO) :
-TUBULE, REGENERATION,-MINIMAL
-FUCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
PARATHYROID (PT) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08621 SEX: MALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 644.4 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 14:22 PROSECTOR: PENNIE PAGE REORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: PENNIE PAGE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08642
DATE OF DEATH: 07/18/86
DATE AND TIME OF NECROPSY: 07/18/86 16:45
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 93
PROSECTOR: BARBARA DAY
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 2
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 552.5 GRAMS
REORDER: BARBARA DAY
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

LUNG (LU) :

-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, MEDULLA (AM) :
-UNILATERALLY EXAMINED,-PRESENT
EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-HYALINE CAST,-MINIMAL
LIVER (LI) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT
-CONGESTION,-SLIGHT
MAMMARY GLAND (MG) :
>TISSUE MISSING
PANCREAS (PA) :
-INFLAMMATION, SUBACUTE,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL
SEMINAL VESICLE (SV) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08642 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 552.5 GRAMS
DATE OF DEATH: 07/18/86 STUDY WEEK OF DEATH: 14 PROSECTOR: BARBARA DAY RECORDED: BARBARA DAY
DATE AND TIME OF NECROPSY: 07/18/86 16:45 PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

P A T H O L O G Y O B S E R V A T I O N S (CONTINUED)

CLINICAL OBSERVATIONS

HISTOPATHOLOGY

SKIN (SK) :
> TISSUE MISSING

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PITUITARY (PI), RECTUM (RE), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08643 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 477.1 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:01 PROSECTOR: BARBARA DAY
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP MEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIIDYMS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SU), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808644 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 556.2 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:12 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHT: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08645 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 509.0 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:30 PROSECTOR: DOUGLAS HERNDON RECORDED: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-RIGHT EYE-OPAQUE

NECROPSY

EYE (EY) :

-EXTERNAL, OPAQUE; RIGHT
^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:RIGHT EYE-
OPAQUE, IN CAPSULE

HISTOPATHOLOGY

EYE (EY) :
-LENS, DEGENERATION,-PRESENT
-RETINA, DEGENERATION,-PRESENT
>NOTE:>RETINAL AND LENS DEGENERATION
WERE UNILATERAL.
KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-PNEUMONIA, INTERSTITIAL,-MODERATELY
SEVERE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08645 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 509.0 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:30 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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STUDY NUMBER: 2399110

HAZLETON LABORATORIES AMERICA, INC.
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*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08647
DATE OF DEATH: 07/22/86
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 97

COOSE GROUP: 2
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
PROSECTOR: BARBARA DAY
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

TERMINAL BODY WEIGHT: 626.6 GRAMS
RECORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
SLIGHT
LIVER (LI) :
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERUICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

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STUDY NUMBER: 2399110

ANIMAL NUMBER: B08646 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 555.8 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:57 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S	
CLINICAL OBSERVATIONS	HISTOPATHOLOGY
- APPEARED NORMAL	KIDNEY (KD) : -TUBULE, REGENERATION, SLIGHT -FOCAL MONONUCLEAR CELL INFILTRATE, SLIGHT
	LIVER (LI) : -INFLAMMATION, SUBACUTE, MINIMAL
	LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, MINIMAL
THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY: ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)	

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08756
DATE OF DEATH: 07/18/86
DATE AND TIME OF NECROPSY: 07/18/86 15:00
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 93
PROSECTOR: BARBARA DAY
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 218.6 GRAMS
REORDER: BARBARA DAY
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-ENTIRE BODY-THIN; BOTH INGUINAL REGIONS-
URINE STAINS

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

LUNG (LU) :

-DARK; ALL LOBES, DARK RED
PITUITARY (PI) :

-DARK; DARK RED

GENERAL INFORMATION (XX) :

>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:ENTIRE BODY-THIN,
BOTH INGUINAL REGIONS-URINE
STAINS

HISTOPATHOLOGY

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL

-HYALINE CAST,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

-CONGESTION,-MINIMAL

PANCREAS (PA) :

>UNREMARKABLE

>NOTE:>LARGE NUMBER OF CELLS UNDERGOING
KARYORHEXIS AND KARYOLYSIS
APPEAR SECONDARY TO POSTMORTEM
CHANGE.

PITUITARY (PI) :

>UNREMARKABLE

SPLEEN (SP) :

-PIGMENT, INCREASED,-SLIGHT

THYMUS (TH) :

>TISSUE MISSING

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08755 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 280.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:25 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808755 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 280.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:25 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.078	.0279 %	.0391	WEIGHT TAKEN
OVARY (OU)	.108	.0384 %	.0538	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.00	.713 %	1.000	WEIGHT TAKEN
HEART (HT)	.92	.327 %	.458	WEIGHT TAKEN
SPLEEN (SP)	.60	.215 %	.302	WEIGHT TAKEN
KIDNEY (KO)	2.55	.908 %	1.273	WEIGHT TAKEN
LIVER (LI)	9.29	3.311 %	4.642	WEIGHT TAKEN

CLINICAL OBSERVATIONS PATHOLOGY OBSERVATIONS HISTOPATHOLOGY

APPEARED NORMAL GENERAL INFORMATION (XX) : LIVER (LI) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE -PORTAL MONONUCLEAR CELL INFILTRATE,-
SLIGHT
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808754 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 04/20/86 STUDY DAY OF DEATH: 1 TERMINAL BODY WEIGHT: 180.3 GRAMS
DATE AND TIME OF NECROPSY: 04/20/86 12:30 PROSECTOR: KIM LINCOLN RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

LUNG (LU) :

-FAILURE TO COLLAPSE; FLUID FILLED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE. ANIMAL DIED
AFTER DOSING

HISTOPATHOLOGY

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT
-CONGESTION,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08753 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 260.9 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:30 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (NG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08752 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 266.6 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:42 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08752
DATE OF DEATH: 07/22/86
DATE AND TIME OF NECROPSY: 07/22/86 11:42
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 97

DOSE GROUP: 4
STUDY WEEK OF DEATH: 14
PROSECTOR: DOUGLAS HERNDON

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 266.6 GRAMS

REORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S

NECROPSY

UTERUS (UT) :

-LUMEN, FLUID; BOTH, MODERATE AMOUNT,
CLEAR

^COLLECTED/TAKEN (XW) :

-ELECTRON MICROSCOPY SAMPLE; LIVER

GENERAL INFORMATION (XX) :

>NOTE1>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

PANCREAS (PA) :

-INFLAMMATION, SUBACUTE,-SLIGHT

PARATHYROID (PT) :

-UNILATERALLY EXAMINED,-PRESENT

THYMUS (TH) :

>TISSUE MISSING

UTERUS (UT) :

-DILATATION,-PRESENT

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08751 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 273.9 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:52 PROSECTOR: BARBARA DAY REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08751 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 273.9 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:52 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S	
CLINICAL OBSERVATIONS	HISTOPATHOLOGY
NECROPSY	
APPEARED NORMAL	KIDNEY (KO) : -TUBULE, REGENERATION,-MINIMAL -FOCAL MONONUCLEAR CELL INFILTRATE,- MINIMAL LIVER (LI) : -INFLAMMATION, SUBACUTE,-MINIMAL LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL PARATHYROID (PT) : >SECTION EXAMINED; TISSUE NOT PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08750 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 270.6 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:53 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO), LIVER (LI),
LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
OVARY (OV), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08750
SEX: FEMALE
DATE OF DEATH: 07/22/86
DATE AND TIME OF NECROPSY: 07/22/86 9:53
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
STUDY WEEK OF DEATH: 14
PROSECTOR: BARBARA DAY
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 270.6 GRAMS
REORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-RIGHT EYE-MISSING

PATHOLOGY OBSERVATIONS
NECROPSY

EYE (EY) :

-GLOBE RUPTURED ANTE MORTEM; RIGHT
^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:RIGHT EYE-
MISSING, ACTUALLY GLOBE RUPTURED
ANTE MORTEM

HISTOPATHOLOGY

EYE (EY) :
-PANOPHTHALMITIS,-SLIGHT
-GLOBE, RUPTURE,-PRESENT
>NOTE:>GLOBE RUPTURE AND INFLAMMATION
WERE UNILATERAL.
KIDNEY (KO) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
PANCREAS (PA) :
-INFLAMMATION, SUBACUTE,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08749 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 288.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:45 PROSECTOR: LINDA RUMBLE RECORDED: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA),
PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08749
DATE OF DEATH: 07/21/86
DATE AND TIME OF NECROPSY: 07/21/86 11:45
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE

DOSE GROUP: 4

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 288.4 GRAMS

REORDER: TIM GROVE

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, MEDULLA (AM) :
-UNILATERALLY EXAMINED,-PRESENT
KIDNEY (KO) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808748 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 258.1 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:05 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08748 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 258.1 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:05 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08747 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 307.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:51 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
 *** PATH/TOX SYSTEM OUTPUT ***
 SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
 DEPARTMENT OF PATHOLOGY

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08747 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 TERMINAL BODY WEIGHT: 307.5 GRAMS
 DATE AND TIME OF NECROPSY: 07/22/86 8:51 PROSECUTOR: LINDA RUMBLE RECORDER: TIM GROVE
 POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.077	.0250 %	.0379	WEIGHT TAKEN
OVARY (OV)	.147	.0479 %	.0727	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.03	.659 %	1.000	WEIGHT TAKEN
HEART (HT)	.98	.318 %	.482	WEIGHT TAKEN
SPLEEN (SP)	.54	.175 %	.265	WEIGHT TAKEN
KIDNEY (KD)	2.33	.757 %	1.149	WEIGHT TAKEN
LIVER (LI)	8.42	2.740 %	4.157	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS
 NECROPSY

CLINICAL OBSERVATIONS
 -APPEARED NORMAL

OVARY (OV):
 -CYST; LEFT, ONE, CLEAR, 4 X 4 X 4 MM
 GENERAL INFORMATION (XX):
 >NOTE: >EXTERNAL OBSERVATIONS: NONE

HISTOPATHOLOGY
 LIVER (LI):
 -PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
 -INFLAMMATION, SUBACUTE, -MINIMAL
 LUNG (LU):
 -PERIBRONCHIAL/PERTVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL
 -INTRA-ALVEOLAR MACROPHAGES, -MINIMAL
 OVARY (OV):
 >UNREMARKABLE
 PARATHYROID (PT):
 -UNILATERALLY EXAMINED, -PRESENT
 THYMUS (TH):
 >TISSUE MISSING

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808746 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 258.8 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:27 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: KIM LINCOLN

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (FO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), OVARY (OV), PITUITARY (PI),
RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08746 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 258.8 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:27 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.082	.0318 %	.0409	WEIGHT TAKEN
OVARY (OV)	.119	.0459 %	.0590	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.01	.778 %	1.000	WEIGHT TAKEN
HEART (HT)	.87	.338 %	.434	WEIGHT TAKEN
SPLEEN (SP)	.58	.224 %	.288	WEIGHT TAKEN
KIDNEY (KD)	1.88	.726 %	.933	WEIGHT TAKEN
LIVER (LI)	8.12	3.139 %	4.036	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, MEDULLA (AM) :
-UNILATERALLY EXAMINED,-PRESENT
KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
PANCREAS (PA) :
-CYTOPLASMIC ALTERATION, BASOPHILIC,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

ANIMAL NUMBER: B08745 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 05/23/86 STUDY DAY OF DEATH: 37 STUDY WEEK OF DEATH: 6 TERMINAL BODY WEIGHT: 303.6 GRAMS
DATE AND TIME OF NECROPSY: 05/23/86 11:57 PROSECTOR: KIM LINCOLN RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XM)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08745 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 05/23/86 STUDY DAY OF DEATH: 37 TERMINAL BODY WEIGHT: 303.6 GRAMS
DATE AND TIME OF NECROPSY: 05/23/86 11:57 PROSECTOR: KIM LINCOLN RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS	P A T H O L O G Y O B S E R V A T I O N S
APPEARED NORMAL	NECROPSY
	LUNG (LU) : -FAILURE TO COLLAPSE; ALL LOBES -MOTTLED; ALL LOBES, LIGHT RED TO DARK RED GENERAL INFORMATION (XX) : >NOTE:>LAST IN-LIFE AND EXTERNAL OBSERVATIONS:NONE
	HISTOPATHOLOGY
	HEART (HT) : -FOCAL ENDOCARDIAL CELL HYPERPLASIA,- SLIGHT LIVER (LI) : -INFLAMMATION, SUBACUTE,-MINIMAL LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL -INTRA-ALVEOLAR FOREIGN MATERIAL,- PRESENT

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808744 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 285.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:59 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08744 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 285.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:59 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
MAMMARY GLAND (MG) :
>TISSUE MISSING

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
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HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08743 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 06/02/86 STUDY DAY OF DEATH: 47 STUDY WEEK OF DEATH: 7 TERMINAL BODY WEIGHT: 186.4 GRAMS
DATE AND TIME OF NECROPSY: 06/02/86 13:25 PROSECTOR: TIM GROVE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), LN, OTHER (LN),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT),
NERVE, SCIATIC (SN), OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), CECUM (CE), COLON (CO),
CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT),
ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), OVARY (OU), PANCREAS (PA), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08743
DATE OF DEATH: 06/02/86
DATE AND TIME OF NECROPSY: 06/02/86 13:25
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 47
PROSECTOR: TIM GROVE
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
SACRIFICE STATUS: UNSCHEDULED (D)
STUDY WEEK OF DEATH: 7
TERMINAL BODY WEIGHT: 186.4 GRAMS
REORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

BRAIN W/STEM (BR) :
-SOFT

LIVER (LI) :
-PALE AREA; ALL LOBES, FOCI, MULTIPLE,
WHITE, PINPOINT

LUNG (LU) :

-DARK; ALL LOBES, BRIGHT RED
ORGANS, MULTIPLE (OG) :
-DARK
-SOFT

STOMACH, GL (ST) :

-DISTENDED; GREATLY
-LUMEN, FLUID; CONTAINS WATERY FOOD-
LIKE MATERIAL

GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, CORTEX (AC) :

-HYPERTROPHY,-MODERATE

BRAIN W/STEM (BR) :

>UNREMARKABLE

KIDNEY (KD) :

-TUBULE, REGENERATION,-MODERATELY
SEVERE

-FOCAL MONONUCLEAR CELL INFILTRATE,-
MODERATE

-HYALINE CAST,-SEVERE

-NEPHROPATHY, CHRONIC PROGRESSIVE,-
SEVERE

LIVER (LI) :

-INFLAMMATION, SUBACUTE,-MINIMAL

-COAGULATIVE NECROSIS,-MINIMAL

>NOTE:>COAGULATIVE NECROSIS WAS

ASSOCIATED WITH A FOCAL

NEUTROPHIL INFILTRATE AND

APPEARS BACTERIAL IN NATURE.

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL

-CONGESTION,-SLIGHT

PARATHYROID (PT) :

-UNILATERALLY EXAMINED,-PRESENT

PITUITARY (PI) :

>TISSUE MISSING

STOMACH, GL (ST) :

>AUTOLYTIC

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08742 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 299.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:34 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (MG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08742
SEX: FEMALE
DATE OF DEATH: 07/21/86
STUDY DAY OF DEATH: 96
DATE AND TIME OF NECROPSY: 07/21/86 10:34
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 299.4 GRAMS
PROSECTOR: BARBARA DAY
REORDER: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP
WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.067	.0222 %	.0319	WEIGHT TAKEN
OVARY (OV)	.167	.0559 %	.0801	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.09	.698 %	1.000	WEIGHT TAKEN
HEART (HT)	.77	.257 %	.368	WEIGHT TAKEN
SPLEEN (SP)	.66	.221 %	.317	WEIGHT TAKEN
KIDNEY (KD)	2.03	.678 %	.971	WEIGHT TAKEN
LIVER (LI)	7.51	2.507 %	3.589	WEIGHT TAKEN

CLINICAL OBSERVATIONS

APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

HISTOPATHOLOGY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL

-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

URINARY BLADDER (UB) :

-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

APPENDIX B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08721 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 324.9 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 12:12 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LT) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LT), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08720 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 269.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 13:50 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08720

SEX: FEMALE

DOSE GROUP: 3

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/23/86

STUDY DAY OF DEATH: 98

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 269.2 GRAMS

DATE AND TIME OF NECROPSY: 07/23/86 13:50

PROSECTOR: BARBARA DAY

REORDER: KIM LINCOLN

POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.065	.0241 %	.0335	WEIGHT TAKEN
OVARY (OV)	.140	.0520 %	.0722	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.94	.721 %	1.000	WEIGHT TAKEN
HEART (HT)	.92	.342 %	.474	WEIGHT TAKEN
SPLEEN (SP)	.53	.197 %	.273	WEIGHT TAKEN
KIDNEY (KD)	1.98	.736 %	1.021	WEIGHT TAKEN
LIVER (LI)	9.57	3.555 %	4.933	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

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*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808719
SEX: FEMALE
DATE OF DEATH: 07/23/86
STUDY DAY OF DEATH: 98
DATE AND TIME OF NECROPSY: 07/23/86 11:20
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 3
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
PROSECTOR: TIM GROVE
TERMINAL BODY WEIGHT: 279.5 GRAMS
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
RECORDED: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08718 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 339.0 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:43 PROSECTOR: PENNIE PAGE RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT) -

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08717 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 322.6 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 12:22 PROSECTOR: PENNIE PAGE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP RECORDER: KIM LINCOLN
WEIGHER: PENNIE PAGE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (NG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08717		SEX: FEMALE	DOSE GROUP: 3	SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE		
DATE OF DEATH: 07/23/86		STUDY DAY OF DEATH: 98	STUDY WEEK OF DEATH: 14	TERMINAL BODY WEIGHT: 322.6 GRAMS		
DATE AND TIME OF NECROPSY: 07/23/86 12:22		PROSECTOR: PENNIE PAGE		RECORDER: KIM LINCOLN		
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL		PATHOLOGIST: RICARDO QUANDER, DVM, DACVP		WEIGHER: PENNIE PAGE		
ORGAN NAME		ABSOLUTE ORGAN WEIGHT (GRAMS)		ORGAN TO BRAIN WEIGHT RATIO		ORGAN STATUS
ADRENAL (AD)		.071		.0220 %		WEIGHT TAKEN
OVARY (OV)		.107		.0332 %		WEIGHT TAKEN
BRAIN W/STEM (BR)		2.00		.620 %		WEIGHT TAKEN
HEART (HT)		1.05		.325 %		WEIGHT TAKEN
SPLEEN (SP)		.63		.195 %		WEIGHT TAKEN
KIDNEY (KD)		2.24		.694 %		WEIGHT TAKEN
LIVER (LI)		8.46		2.622 %		WEIGHT TAKEN

CLINICAL OBSERVATIONS	PATHOLOGY OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	GENERAL INFORMATION (XX) : >NOTE:>EXTERNAL OBSERVATIONS:NONE	LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL -INFLAMMATION, SUBACUTE,-SLIGHT -FATTY CHANGE,-MINIMAL LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL -INTRA-ALVEOLAR MACROPHAGES,-MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08716 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 287.5 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:26 PROSECTOR: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP RECORDER: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
SLIGHT
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08715 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 315.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:45 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LT) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08714 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 328.9 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:37 PROSECTOR: PENNIE PAGE RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: PENNIE PAGE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.055	.0167 %	.0259	WEIGHT TAKEN
OVARY (OV)	.115	.0350 %	.0542	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.12	.645 %	1.000	WEIGHT TAKEN
HEART (HT)	.95	.289 %	.448	WEIGHT TAKEN
SPLEEN (SP)	.72	.219 %	.340	WEIGHT TAKEN
KIDNEY (KD)	2.11	.642 %	.995	WEIGHT TAKEN
TESTES (TE)	8.54	2.603 %	4.038	WEIGHT TAKEN

HISTOPATHOLOGY

-APPEARED NORMAL

SPLEEN (SP) :
-CYST; FEW, CLEAR, 1 X 1 MM TO 5 X 3
MM
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
SPLEEN (SP) :
-CAPSULE. CYST,-PRESENT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), >COLLECTED/TAKEN (XU)

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08713
DATE OF DEATH: 07/22/86
DATE AND TIME OF NECROPSY: 07/22/86 10:46
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
DOSE GROUP: 3
STUDY WEEK OF DEATH: 14
PROSECTOR: LINDA RUMBLE
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 315.1 GRAMS
RECORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KO) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-PELVIS,MINERALIZATION,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
-COAGULATIVE NECROSIS,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08712 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 298.6 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 13:48 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08712
SEX: FEMALE
DATE OF DEATH: 07/22/86
STUDY DAY OF DEATH: 97
DATE AND TIME OF NECROPSY: 07/22/86 13:48
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 3
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 298.6 GRAMS
PROSECTOR: DOUGLAS HERNDON
RECORDED: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DUM, DACUP
WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.053	.0179 %	.0269	WEIGHT TAKEN
OVARY (OV)	.127	.0424 %	.0636	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.99	.666 %	1.000	WEIGHT TAKEN
HEART (HT)	.98	.329 %	.494	WEIGHT TAKEN
SPLEEN (SP)	.57	.190 %	.285	WEIGHT TAKEN
KIDNEY (KD)	2.01	.673 %	1.011	WEIGHT TAKEN
LIVER (LI)	8.41	2.817 %	4.231	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

SKIN, OTHER (SS) :
-ALOPECIA; RIGHT FORELEG
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:RIGHT
FORELEG-ALOPECIA, SECTION IN
CAPSULE

HISTOPATHOLOGY

LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
-FATTY CHANGE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
SKIN, OTHER (SS) :
-INFLAMMATION, CHRONIC ACTIVE, -MINIMAL
-HYPERKERATOSIS, -MINIMAL

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808711 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 274.4 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:30 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S	
CLINICAL OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	LIVER (LI): -PORTAL MONONUCLEAR CELL INFILTRATE,- MINIMAL -INFLAMMATION, SUBACUTE,-MINIMAL LUNG (LU): -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-SLIGHT -INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
^COLLECTED/TAKEN (XW): -ELECTRON MICROSCOPY SAMPLE; LIVER GENERAL INFORMATION (XX): >NOTE:>EXTERNAL OBSERVATIONS:NONE	
THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY: ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)	
THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION: KIDNEY (KD)	

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808710 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 303.9 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

STUDY NUMBER: 2399110

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 303.9 GRAMS

SEX: FEMALE
ANIMAL NUMBER: B08710
DATE OF DEATH: 07/22/86
DATE AND TIME OF NECROPSY: 07/22/86 10:56
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

PROSECTOR: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP
WEIGHER: KIM LINCOLN

ORGAN STATUS

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	WEIGHT TAKEN
ADRENAL (AD)	.091	.0298 %	.0437	WEIGHT TAKEN
OVARY (OV)	.132	.0434 %	.0636	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.08	.683 %	1.000	WEIGHT TAKEN
HEART (HT)	1.05	.346 %	.506	WEIGHT TAKEN
SPLEEN (SP)	.69	.227 %	.333	WEIGHT TAKEN
KIDNEY (KD)	2.29	.754 %	1.103	WEIGHT TAKEN
LIVER (LI)	8.27	2.721 %	3.985	WEIGHT TAKEN

WEIGHT TAKEN
WEIGHT TAKEN
WEIGHT TAKEN
WEIGHT TAKEN
WEIGHT TAKEN
WEIGHT TAKEN

PATHOLOGY OBSERVATIONS
NECROPSY

CLINICAL OBSERVATIONS

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

-APPEARED NORMAL

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
-FATTY CHANGE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), (SP),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONEL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XU)

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08709
SEX: FEMALE
DATE OF DEATH: 07/21/86
DATE AND TIME OF NECROPSY: 07/21/86 11:38
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 3
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
PROSECTOR: BARBARA DAY
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, MINERALIZATION,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08708 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 315.0 GRAMS
DATE OF DEATH: 07/18/86 STUDY DAY OF DEATH: 93 STUDY WEEK OF DEATH: 14 REORDER: BARBARA DAY
DATE AND TIME OF NECROPSY: 07/18/86 16:35 PROSECTOR: BARBARA DAY WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM)
, NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA), PARATHYROID (PT),
PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08708
DATE OF DEATH: 07/18/86
DATE AND TIME OF NECROPSY: 07/18/86 16:35
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 93
PROSECTOR: BARBARA DAY
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 3
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 315.0 GRAMS
REORDER: BARBARA DAY
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

PATHOLOGY OBSERVATIONS
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

LN, OTHER (LN) :
-ENLARGED; MEDIASTINAL
LUNG (LU) :
-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
THYMUS (TH) :
-CYST; THROUGHOUT, MULTIPLE, CLEAR,
PINPOINT TO 2 X 2 MM
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, CORTEX (AC) :
-INFLAMMATION, SUBACUTE,-MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE,-SLIGHT
LIVER (LT) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LN, OTHER (LN) :
-MEDIASTINUM,ABSCESS,-PRESENT
>NOTE:>THE TISSUE SUBMITTED CONSIST
ENTIRELY OF A MEDIASTINAL
ABSCESS WITH NO EVIDENCE OF
MEDIASTINAL NODE PRESENT.
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT
THYMUS (TH) :
>UNREMARKABLE
THYROID (TY) :
-INFLAMMATION, SUBACUTE,-MINIMAL
UTERUS (UT) :
-DILATATION,-PRESENT

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08707 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 322.7 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:47 PROSECTOR: BARBARA DAY
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PT), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KO)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08707
DATE OF DEATH: 07/22/86
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL
SEX: FEMALE
STUDY DAY OF DEATH: 97
DOSE GROUP: 3
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
PROSECTOR: BARBARA DAY
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
REORDER: TIM GROVE
WEIGHER: BARBARA DAY
TERMINAL BODY WEIGHT: 322.7 GRAMS

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.077	.0239 %	.0366	WEIGHT TAKEN
OVARY (OV)	.137	.0424 %	.0651	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.10	.651 %	1.000	WEIGHT TAKEN
HEART (HT)	.92	.286 %	.440	WEIGHT TAKEN
SPLEEN (SP)	.79	.244 %	.375	WEIGHT TAKEN
KIDNEY (KO)	1.98	.612 %	.940	WEIGHT TAKEN
LIVER (LI)	7.24	2.243 %	3.444	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08706 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 280.0 GRAMS
DATE OF DEATH: 06/09/86 STUDY DAY OF DEATH: 54 STUDY WEEK OF DEATH: 8 RECORDER: TIM GROVE
DATE AND TIME OF NECROPSY: 06/09/86 14:23 PROSECTOR: TIM GROVE WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), *COLLECTED/TAKEN (XM)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
OVARY (OV), PANCREAS (PA), RECTUM (RE), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08706
DATE OF DEATH: 06/09/86
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 54
PROSECTOR: TIM GROVE
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 3
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 280.0 GRAMS
REORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

LN, OTHER (LN) :

-DARK; ONE MANDIBULAR, RIGHT SIDE, RED
-UNEQUALLY SIZED; ONE MANDIBULAR,
ENLARGED, RIGHT SIDE, 9 X 7 X 5 MM,
FIRM

GENERAL INFORMATION (XX) :

>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LN, OTHER (LN) :

-HYPERPLASIA, LYMPHOID,-MODERATELY
SEVERE

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT

MAMMARY GLAND (MG) :

>TISSUE MISSING

PARATHYROID (PT) :

>SECTION EXAMINED; TISSUE NOT PRESENT
PITUITARY (PI) :

-EMBRYONAL EPITHELIAL REST,-PRESENT
SKIN (SK) :

>TISSUE MISSING

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08705 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 193.0 GRAMS
DATE OF DEATH: 04/21/86 STUDY DAY OF DEATH: 5 STUDY WEEK OF DEATH: 1 RECORDER: BARBARA DAY
DATE AND TIME OF NECROPSY: 04/21/86 14:50 PROSECTOR: BARBARA DAY WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI),
LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08705 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 04/21/86 STUDY DAY OF DEATH: 5 STUDY WEEK OF DEATH: 1 TERMINAL BODY WEIGHT: 193.0 GRAMS
DATE AND TIME OF NECROPSY: 04/21/86 14:50 PROSECTOR: BARBARA DAY RECORDER: BARBARA DAY
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

JEJUNUM (JE) :
-DARK AREA; IN WALL, MULTIPLE, RED,
PINPOINT TO 3 X 3 MM
LUNG (LU) :
-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
SPLEEN (SP) :
-CAPSULE, PALE FILM
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

JEJUNUM (JE) :
>AUTOLYTIC
LIVER (LI) :
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
-INTRA-ALVEOLAR FOREIGN MATERIAL, -
PRESENT
NERVE, SCIATIC (SN) :
-INFLAMMATION, SUBACUTE, -SLIGHT
SPLEEN (SP) :
-CAPSULE, FOCAL FIBROSIS, -SLIGHT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08704 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 320.6 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:06 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08704 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 320.6 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:06 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.082	.0257 %	.0362	WEIGHT TAKEN
OVARY (OV)	.124	.0386 %	.0543	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.28	.711 %	1.000	WEIGHT TAKEN
HEART (HT)	1.05	.327 %	.459	WEIGHT TAKEN
SPLEEN (SP)	.87	.270 %	.380	WEIGHT TAKEN
KIDNEY (KD)	2.49	.775 %	1.090	WEIGHT TAKEN
LIVER (LI)	8.09	2.524 %	3.549	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
-FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
-FATTY CHANGE, -SLIGHT
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08703 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 322.3 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:48 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-RIGHT EYE-MISSING

EYE (EY) :

-GLOBE RUPTURED ANTE MORTEM; RIGHT
^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:RIGHT EYE-
MISSING, ACTUALLY GLOBE RUPTURED
ANTE MORTEM, REMNANTS IN CAPSULE

HISTOPATHOLOGY

EYE (EY) :

>TISSUE MISSING

KIDNEY (KD) :

-TUBULE, MINERALIZATION,-MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

LUNG (LU) :

-INFLAMMATION, SUBACUTE,-SLIGHT

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (ED), LIVER (LI),
LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808702 SEX: FEMALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 337.2 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:56 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
-FATTY CHANGE, -SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL., EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAJOR SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (NG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08681 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 338.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 14:04 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

APPENDIX B

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08681
SEX: FEMALE
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 14:04
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 2
STUDY WEEK OF DEATH: 14
PROSECTOR: DOUGLAS HERNDON
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: DOUGLAS HERNDON

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

TERMINAL BODY WEIGHT: 338.3 GRAMS

REORDER: KIM LINCOLN

WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.069	.0204 %	.0356	WEIGHT TAKEN
OVARY (OV)	.146	.0432 %	.0753	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.94	.573 %	1.000	WEIGHT TAKEN
HEART (HT)	.97	.287 %	.500	WEIGHT TAKEN
SPLEEN (SP)	.65	.192 %	.335	WEIGHT TAKEN
KIDNEY (KO)	2.27	.671 %	1.170	WEIGHT TAKEN
LIVER (LI)	8.60	2.542 %	4.433	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KO):

-FOCAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

LIVER (LI):

-PORTAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

-FATTY CHANGE,-MINIMAL

LUNG (LU):

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
<COLLECTED/TAKEN (XW)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08680 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 331.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 13:35 PROSECTOR: PENNIE PAGE RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: PENNIE PAGE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08680 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY WEEK OF DEATH: 14
DATE AND TIME OF NECROPSY: 07/23/86 13:35 PROSECTOR: PENNIE PAGE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP RECORDER: KIM LINCOLN
WEIGHTER: PENNIE PAGE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.082	.0248 %	.0385	WEIGHT TAKEN
OVARY (OV)	.108	.0326 %	.0507	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.13	.643 %	1.000	WEIGHT TAKEN
HEART (HT)	1.04	.314 %	.488	WEIGHT TAKEN
SPLEEN (SP)	.53	.160 %	.249	WEIGHT TAKEN
KIDNEY (KO)	2.12	.640 %	.995	WEIGHT TAKEN
LIVER (LI)	7.91	2.389 %	3.714	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KO) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
-TUBULE, MINERALIZATION, -MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
-FATTY CHANGE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), DECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TV), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

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STUDY NUMBER: 2399110

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808679 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 289.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:36 PROSECTOR: DOUGLAS HERNDON RECORDED: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-MALOCCLUSION

UTERUS (UT) :
-DISTENDED; BOTH HORNS
^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL
OBSERVATIONS: MALOCCLUSION

HISTOPATHOLOGY

LIVER (LT) :
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
UTERUS (UT) :
-DILATATION, -PRESENT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXD (ED),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (MG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08678 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 235.1 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERUTICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08678 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 235.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 11:14 PROSECTOR: BARBARA DAY RECORDED: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.060	.0256 %	.0311	WEIGHT TAKEN
OVARY (OV)	.109	.0464 %	.0564	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.93	.821 %	1.000	WEIGHT TAKEN
HEART (HT)	.70	.298 %	.362	WEIGHT TAKEN
SPLEEN (SP)	.50	.214 %	.260	WEIGHT TAKEN
KIDNEY (KD)	1.82	.774 %	.942	WEIGHT TAKEN
LIVER (LI)	5.44	2.315 %	2.818	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

STOMACH, GL (ST) :
-RAISED AREA; ADJACENT TO NONGLANDULAR MUCOSA, ONE, FIRM, TAN, 2 X 2 MM
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,- MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,- MINIMAL
LUNG (LU) :
-INFLAMMATION, SUBACUTE,-SLIGHT
-PERIBRONCHIAL/PERTVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT
STOMACH, GL (ST) :
-KERATIN CYST,-PRESENT
>NOTE:>THE KERATIN CYST IS LOCATED IN THE NONGLANDULAR STOMACH AT THE JUNCTION WITH THE GLANDULAR STOMACH.

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08677 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 06/29/86 STUDY DAY OF DEATH: 74 STUDY WEEK OF DEATH: 11 TERMINAL BODY WEIGHT: 263.7 GRAMS
DATE AND TIME OF NECROPSY: 06/29/86 15:10 PROSECTOR: KIM LINCOLN RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08677
DATE OF DEATH: 06/29/86
DATE AND TIME OF NECROPSY: 06/29/86 15:10
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 74
PROSECTOR: KIM LINCOLN
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 2
STUDY WEEK OF DEATH: 11
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 263.7 GRAMS
RECORDED: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S	
CLINICAL OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	HEART (HT) : -INFLAMMATION, SUBACUTE,-SLIGHT LIVER (LI) : -INFLAMMATION, SUBACUTE,-MINIMAL LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL -INTRA-ALVEOLAR MACROPHAGES,-MODERATELY SEVERE -INTRA-ALVEOLAR FOREIGN MATERIAL,- PRESENT -EDEMA,-MODERATE

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08676 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 279.0 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:51 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808675 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 278.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:08 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PANCREAS (PA) :

-GELATINOUS

-COLLECTED/TAKEN (XW) :

-ELECTRON MICROSCOPY SAMPLE; LIVER

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT

PANCREAS (PA) :

>UNREMARKABLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (ED),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (MG),
OVARY (OV), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.071	.0257 %	.0333	WEIGHT TAKEN
OVARY (OV)	.131	.0474 %	.0615	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.13	.770 %	1.000	WEIGHT TAKEN
HEART (HT)	1.04	.376 %	.488	WEIGHT TAKEN
SPLEEN (SP)	.52	.188 %	.244	WEIGHT TAKEN
KIDNEY (KD)	1.91	.691 %	.897	WEIGHT TAKEN
LIVER (LI)	7.78	2.814 %	3.653	WEIGHT TAKEN

CLINICAL OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	KIDNEY (KD) : -HYALINE CAST,-MINIMAL LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL LUNG (LU) : -INFLAMMATION, SUBACUTE,-MINIMAL -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:	
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)	

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808673 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 257.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:28 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S	
CLINICAL OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,- MINIMAL -INFLAMMATION, SUBACUTE,-MINIMAL -FATTY CHANGE,-MODERATE LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08672
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 9:12
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 98
PROSECTOR: PENNIE PAGE
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

DOSE GROUP: 2
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 303.4 GRAMS
RECORDED: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08671 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 286.7 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:39 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHT: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KO) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-PELVIS MINERALIZATION,-MINIMAL
LIVER (LI) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08670 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 317.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 13:50 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (NG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KO)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08670

SEX: FEMALE

DOSE GROUP: 2

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/22/86

STUDY DAY OF DEATH: 97

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 317.5 GRAMS

DATE AND TIME OF NECROPSY: 07/22/86 13:50

PROSECTOR: LINDA RUMBLE

REORDER: TIM GROVE

POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.077	.0243 %	.0389	WEIGHT TAKEN
OVARY (OV)	.129	.0407 %	.0654	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.98	.623 %	1.000	WEIGHT TAKEN
HEART (HT)	.93	.292 %	.468	WEIGHT TAKEN
SPLEEN (SP)	.64	.202 %	.325	WEIGHT TAKEN
KIDNEY (KD)	1.92	.606 %	.972	WEIGHT TAKEN
LIVER (LI)	7.75	2.440 %	3.917	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

-FATTY CHANGE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT

-PNEUMONIA, INTERSTITIAL,-MODERATE

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808669 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 230.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:50 PROSECTOR: BARBARA DAY REORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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STUDY NUMBER: 2399110

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*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808668
SEX: FEMALE
DATE OF DEATH: 07/22/86
STUDY DAY OF DEATH: 97
PROSECTOR: KIM LINCOLN
DATE AND TIME OF NECROPSY: 07/22/86 10:20
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 288.7 GRAMS
REORDER: TIM GROVE
WEIGHER: KIM LINCOLN

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808668 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 288.7 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.090	.0313 %	.0418	WEIGHT TAKEN
OVARY (OU)	.176	.0610 %	.0814	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.16	.749 %	1.000	WEIGHT TAKEN
HEART (HT)	1.13	.393 %	.525	WEIGHT TAKEN
SPLEEN (SP)	.59	.204 %	.272	WEIGHT TAKEN
KIDNEY (KD)	2.30	.796 %	1.063	WEIGHT TAKEN
LIVER (LI)	7.90	2.738 %	3.654	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-MALOCCLUSION

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL

OBSERVATIONS: MALOCCLUSION

HISTOPATHOLOGY

KIDNEY (KD):

- FOCAL MONONUCLEAR CELL INFILTRATE, - MINIMAL

LIVER (LI):

- PORTAL MONONUCLEAR CELL INFILTRATE, - MINIMAL

LUNG (LU):

- INFLAMMATION, SUBACUTE, - MINIMAL
- PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, - MINIMAL

- INTRA-ALVEOLAR MACROPHAGES, - MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (MG), OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08667 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 319.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:23 PROSECTOR: BARBARA DAY REORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MORROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808666 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 268.8 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:33 PROSECTOR: LINDA RUMBLE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP RECORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808665 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 311.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:32 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08665 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 311.5 GRAMS
 DATE AND TIME OF NECROPSY: 07/22/86 8:32 PROSECTOR: LINDA RUMBLE
 POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP RECORDER: TIM GROVE
 WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.056	.0180 %	.0259	WEIGHT TAKEN
OVARY (OV)	.129	.0415 %	.0598	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.16	.694 %	1.000	WEIGHT TAKEN
HEART (HT)	.89	.285 %	.411	WEIGHT TAKEN
SPLEEN (SP)	.81	.262 %	.377	WEIGHT TAKEN
KIDNEY (KD)	2.14	.688 %	.992	WEIGHT TAKEN
LIVER (LI)	7.07	2.270 %	3.273	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
 -FOCAL MONONUCLEAR CELL INFILTRATE,-
 MINIMAL
 LIVER (LI) :
 -PORTAL MONONUCLEAR CELL INFILTRATE,-
 MINIMAL
 -INFLAMMATION, SUBACUTE,-SLIGHT
 LUNG (LU) :
 -PERIBRONCHIAL/PERIVASCULAR,
 INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
 BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
 DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (ED),
 LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
 MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
 OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
 STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
 ^COLLECTED/TAKEN (XU)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08664 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 322.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:43 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: LINDA RUMBLE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08664 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 322.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:43 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.068	.0212 %	.0296	WEIGHT TAKEN
OVARY (OU)	.155	.0479 %	.0670	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.30	.715 %	1.000	WEIGHT TAKEN
HEART (HT)	1.15	.358 %	.501	WEIGHT TAKEN
SPLEEN (SP)	.67	.209 %	.293	WEIGHT TAKEN
KIDNEY (KD)	2.56	.794 %	1.111	WEIGHT TAKEN
LIVER (LI)	10.29	3.191 %	4.463	WEIGHT TAKEN

CLINICAL OBSERVATIONS
APPEARED NORMAL

NECROPSY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
SLIGHT
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBCAPSULE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XU)

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808663 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 06/06/86 STUDY DAY OF DEATH: 51 STUDY WEEK OF DEATH: 8 TERMINAL BODY WEIGHT: 316.9 GRAMS
DATE AND TIME OF NECROPSY: 06/06/86 15:50 PROSECTOR: BARBARA DAY RECORDER: BARBARA DAY
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM)
, NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA), PARATHYROID (PT),
PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808663
DATE OF DEATH: 06/06/86
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 51
PROSECTOR: BARBARA DAY
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 2
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 316.9 GRAMS

REORDER: BARBARA DAY
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

LN, OTHER (LN) :
-ENLARGED; MANDIBULAR
LUNG (LU) :
-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LN, OTHER (LN) :
-HYPERPLASIA, LYMPHOID,-MODERATELY
SEVERE
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08662 SEX: FEMALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 273.2 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:41 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHT: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
SLIGHT
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -SLIGHT
-FATTY CHANGE, -SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORO, CERVICAL (CS), CORO, LUMBAR (LC), CORO, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (FO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08641 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 295.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 14:07 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08641

SEX: FEMALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/23/86

STUDY DAY OF DEATH: 98

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 295.1 GRAMS

DATE AND TIME OF NECROPSY: 07/23/86 14:07

PROSECTOR: BARBARA DAY

REORDER: KIM LINCOLN

POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN S T A T U S
ADRENAL (AD)	.072	.0244 %	.0362	WEIGHT TAKEN
OVARY (OV)	.141	.0478 %	.0709	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.99	.674 %	1.000	WEIGHT TAKEN
HEART (HT)	.84	.285 %	.422	WEIGHT TAKEN
SPLEEN (SP)	.64	.217 %	.322	WEIGHT TAKEN
KIDNEY (KD)	2.00	.678 %	1.005	WEIGHT TAKEN
LIVER (LI)	7.59	2.572 %	3.814	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S

NECROPSY

HISTOPATHOLOGY

HEART (HT) :

-INFLAMMATION, SUBACUTE,-MINIMAL

LACRIMAL GL, EXO (EO) :

-INFLAMMATION, SUBACUTE,-MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

-FATTY CHANGE,-MODERATE

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08640 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 344.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 13:59 PROSECTOR: PENNIE PAGE RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: PENNIE PAGE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (DG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08640

SEX: FEMALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/23/86

STUDY DAY OF DEATH: 98

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 344.3 GRAMS

DATE AND TIME OF NECROPSY: 07/23/86 13:59

PROSECTOR: PENNIE PAGE

REORDER: KIM LINCOLN

POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

WEIGHER: PENNIE PAGE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.067	.0195 %	.0325	WEIGHT TAKEN
OVARY (OV)	.120	.0349 %	.0583	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.06	.598 %	1.000	WEIGHT TAKEN
HEART (HT)	1.02	.296 %	.495	WEIGHT TAKEN
SPLEEN (SP)	.60	.174 %	.291	WEIGHT TAKEN
KIDNEY (KD)	2.14	.622 %	1.039	WEIGHT TAKEN
LIVER (LI)	8.47	2.460 %	4.112	WEIGHT TAKEN

CLINICAL OBSERVATIONS	PATHOLOGY OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	GENERAL INFORMATION (XX) : >NOTE:>EXTERNAL OBSERVATIONS:NONE	KIDNEY (KD) : -TUBULE, REGENERATION,-MINIMAL -FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL LIVER (LI) : -HYALINE CAST,-MINIMAL -PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL LUNG (LU) : -INFLAMMATION, SUBACUTE,-MINIMAL -FATTY CHANGE,-SLIGHT -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL UTERUS (UT) : -DILATATION,-PRESENT

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08639 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 344.2 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN (SK), OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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STUDY NUMBER: 2399110

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808639 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 344.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 13:35 PROSECTOR: BARBARA DAY REORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	O R G A N S T A T U S
ADRENAL (AD)	.072	.0209 %	.0381	WEIGHT TAKEN	
OVARY (OV)	.165	.0479 %	.0873	WEIGHT TAKEN	
BRAIN W/STEM (BR)	1.89	.549 %	1.000	WEIGHT TAKEN	
HEART (HT)	.88	.256 %	.466	WEIGHT TAKEN	
SPLEEN (SP)	.54	.157 %	.286	WEIGHT TAKEN	
KIDNEY (KD)	2.24	.651 %	1.185	WEIGHT TAKEN	
LIVER (LI)	7.97	2.316 %	4.217	WEIGHT TAKEN	

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

HISTOPATHOLOGY

CLINICAL OBSERVATIONS

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL

LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT
-PNEUMONIA, INTERSTITIAL,-SLIGHT

-APPEARED NORMAL

APPENDIX B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08638 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 283.4 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:48 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08638 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/23/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 283.4 GRAMS
 DATE AND TIME OF NECROPSY: 07/23/86 10:48 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
 POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	O R G A N	
				S T A T U S	W E I G H T
ADRENAL (AD)	.062	.0219 %	.0360	WEIGHT TAKEN	WEIGHT TAKEN
OVARY (OV)	.126	.0445 %	.0733	WEIGHT TAKEN	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.72	.607 %	1.000	WEIGHT TAKEN	WEIGHT TAKEN
HEART (HT)	.83	.293 %	.483	WEIGHT TAKEN	WEIGHT TAKEN
SPLEEN (SP)	.59	.208 %	.343	WEIGHT TAKEN	WEIGHT TAKEN
KIDNEY (KD)	1.98	.699 %	1.151	WEIGHT TAKEN	WEIGHT TAKEN
LIVER (LT)	7.61	2.685 %	4.424	WEIGHT TAKEN	WEIGHT TAKEN

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

GENERAL INFORMATION (XX) :
 >NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
 -PORTAL MONONUCLEAR CELL INFILTRATE,-
 MINIMAL
 -INFLAMMATION, SUBACUTE,-MINIMAL
 LUNG (LU) :
 -PERIBRONCHIAL/PERIVASCULAR,
 INFILTRATION, LYMPHOID,-MINIMAL
 -INTRA-ALVEOLAR MACROPHAGES,-SLIGHT
 NERVE, SCIATIC (SN) :
 -UNILATERALLY EXAMINED,-PRESENT
 PARATHYROID (PT) :
 >SECTION EXAMINED; TISSUE NOT PRESENT

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08637 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 302.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:29 PROSECTOR: BARBARA DAY
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP RECORDER: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08637 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 302.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:29 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS	NECROPSY	HISTOPATHOLOGY
-APPEARED NORMAL	^COLLECTED/TAKEN (XW) : -ELECTRON MICROSCOPY SAMPLE; LIVER GENERAL INFORMATION (XX) : >NOTE:>EXTERNAL OBSERVATIONS:NONE	HEART (HT) : -INFLAMMATION, SUBACUTE,-MINIMAL LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,- MINIMAL -INFLAMMATION, SUBACUTE,-MINIMAL -FATTY CHANGE,-MINIMAL LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808636 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 309.4 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:09 PROSECTOR: BARBARA DAY REORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHT: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK),
NERVE, SCIATIC (SN), OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08636 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 TERMINAL BODY WEIGHT: 309.4 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:09 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

SKIN, OTHER (SS) :
-ALOPECIA; RIGHT HINDLEG, SLIGHT
^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:RIGHT
HINDLEG-ALOPECIA, IN CAPSULE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
SKIN, OTHER (SS) :
>UNREMARKABLE

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08635 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 274.0 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08635 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 274.0 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:39 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	O R G A N	
				S T A T U S	
ADRENAL (AD)	.073	.0266 %	.0420	WEIGHT TAKEN	
OVARY (OV)	.109	.0398 %	.0626	WEIGHT TAKEN	
BRAIN W/STEM (BR)	1.74	.635 %	1.000	WEIGHT TAKEN	
HEART (HT)	.82	.299 %	.471	WEIGHT TAKEN	
SPLEEN (SP)	.47	.172 %	.270	WEIGHT TAKEN	
KIDNEY (KD)	1.98	.723 %	1.138	WEIGHT TAKEN	
LIVER (LI)	6.57	2.398 %	3.776	WEIGHT TAKEN	

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-MALOCCLUSION

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL

OBSERVATIONS: MALOCCLUSION

HISTOPATHOLOGY

KIDNEY (KD) :

-FOCAL MONONUCLEAR CELL INFILTRATE, -

MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE, -

MINIMAL

-INFLAMMATION, SUBACUTE, -MINIMAL

-FATTY CHANGE, -MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID, -MINIMAL

PARATHYROID (PT) :

-UNILATERALLY EXAMINED, -PRESENT

URINARY BLADDER (UB) :

>TISSUE MISSING

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08634 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 271.7 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:38 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OU), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08634 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 271.7 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:38 PROSECTOR: DOUGLAS HERNDON RECORDED: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

NECROPSY

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT
PARATHYROID (PT) :
>SECTION EXAMINED; TISSUE NOT PRESENT
UTERUS (UT) :
-DILATATION,-PRESENT

APPENDIX B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08633 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 281.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 14:01 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08633

SEX: FEMALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/22/86

STUDY DAY OF DEATH: 97

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 281.5 GRAMS

DATE AND TIME OF NECROPSY: 07/22/86 14:01

PROSECTOR: KIM LINCOLN

REORDER: TIM GROVE

POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.089	.0315 %	.0435	WEIGHT TAKEN
OVARY (OV)	.140	.0496 %	.0684	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.04	.725 %	1.000	WEIGHT TAKEN
HEART (HT)	.95	.338 %	.466	WEIGHT TAKEN
SPLEEN (SP)	.59	.208 %	.287	WEIGHT TAKEN
KIDNEY (KD)	2.08	.737 %	1.017	WEIGHT TAKEN
LIVER (LI)	7.25	2.577 %	3.553	WEIGHT TAKEN

CLINICAL OBSERVATIONS	PATHOLOGY OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	GENERAL INFORMATION (XX) : >NOTE:>EXTERNAL OBSERVATIONS:NONE	HEART (HT) : -INFLAMMATION, SUBACUTE,-MINIMAL KIDNEY (KD) : -TUBULE, REGENERATION,-MINIMAL LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL -INFLAMMATION, SUBACUTE,-MINIMAL -FATTY CHANGE,-MINIMAL LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL -PNEUMONIA, INTERSTITIAL,-SLIGHT PARATHYROID (PT) : -UNILATERALLY EXAMINED,-PRESENT

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08632 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 289.1 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 13:47 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08632

SEX: FEMALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/22/86

STUDY DAY OF DEATH: 97

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 289.1 GRAMS

DATE AND TIME OF NECROPSY: 07/22/86 13:47

PROSECTOR: BARBARA DAY

REORDER: TIM GROVE

POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.072	.0247 %	.0371	WEIGHT TAKEN
OVARY (OV)	.117	.0406 %	.0609	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.93	.667 %	1.000	WEIGHT TAKEN
HEART (HT)	.80	.276 %	.414	WEIGHT TAKEN
SPLEEN (SP)	.64	.222 %	.332	WEIGHT TAKEN
KIDNEY (KD)	2.00	.692 %	1.038	WEIGHT TAKEN
LIVER (LI)	6.75	2.336 %	3.503	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

SPLEEN (SP) :

-CYST; AT MARGIN, ONE, CLEAR, 2 X 1 MM

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

-FATTY CHANGE,-SLIGHT

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL

PARATHYROID (PT) :

>SECTION EXAMINED; TISSUE NOT PRESENT

SPLEEN (SP) :

-CAPSULE, CYST,-PRESENT

HISTOPATHOLOGY

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08631 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 288.6 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 13:31 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT),
PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08631

SEX: FEMALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/22/86

STUDY DAY OF DEATH: 14

TERMINAL BODY WEIGHT: 288.6 GRAMS

DATE AND TIME OF NECROPSY: 07/22/86 13:31

PROSECTOR: DOUGLAS HERNDON

REORDER: TIM GROVE

POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.074	.0258 %	.0370	WEIGHT TAKEN
OVARY (OV)	.127	.0439 %	.0628	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.02	.699 %	1.000	WEIGHT TAKEN
HEART (HT)	.97	.337 %	.483	WEIGHT TAKEN
SPLEEN (SP)	.64	.222 %	.318	WEIGHT TAKEN
KIDNEY (KD)	2.06	.714 %	1.023	WEIGHT TAKEN
LIVER (LI)	7.03	2.434 %	3.485	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

BONE, FEMUR (FE) :

>TISSUE MISSING

LACRIMAL GL, EXO (EO) :

-INFLAMMATION, SUBACUTE,-MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

-INFLAMMATION, SUBACUTE,-SLIGHT

-FATTY CHANGE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08630 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 302.9 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:06 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OU), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

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DEPARTMENT OF PATHOLOGY

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STUDY NUMBER: 2399110

ANIMAL NUMBER: B08630
SEX: FEMALE
DOSE GROUP: 1
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86
STUDY DAY OF DEATH: 97
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 302.9 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:06
PROSECTOR: LINDA RUMBLE
RECORDED: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP
WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.074	.0246 %	.0756	WEIGHT TAKEN
OVARY (OV)	.186	.0615 %	.0890	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.09	.691 %	1.000	WEIGHT TAKEN
HEART (HT)	1.01	.332 %	.481	WEIGHT TAKEN
SPLEEN (SP)	.67	.220 %	.319	WEIGHT TAKEN
KIDNEY (KD)	2.31	.763 %	1.104	WEIGHT TAKEN
LIVER (LI)	8.19	2.704 %	3.914	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

HISTOPATHOLOGY

CLINICAL OBSERVATIONS

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

KIDNEY (KD):
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LIVER (LI):
-HYALINE CAST,-MINIMAL
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LUNG (LU):
-INFLAMMATION, SUBACUTE,-SLIGHT

-APPEARED NORMAL

PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
PARATHYROID (PT):
>SECTION EXAMINED; TISSUE NOT PRESENT

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08629 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 328.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:23 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LIVER (LI),
LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08629 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 328.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:23 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S	
CLINICAL OBSERVATIONS	HISTOPATHOLOGY
-APPEARED NORMAL	KIDNEY (KD) : -PELVIS, DILATATION,-MODERATELY SEVERE LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,- MINIMAL -INFLAMMATION, SUBACUTE,-SLIGHT LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL UTERUS (UT) : -DILATATION,-PRESENT

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08628
DATE OF DEATH: 07/22/86
DATE AND TIME OF NECROPSY: 07/22/86 8:43
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

STUDY DAY OF DEATH: 97

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 223.4 GRAMS

PROSECTOR: KIM LINCOLN

REORDER: TIM GROVE

PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

WEIGHER: KIM LINCOLN

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), LACRIMAL GL, EXO (EO), LIVER (LI),
LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU),
ESOPHAGUS (ES), EYE (EY), ILEUM (IL), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA),
PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYROID (TY),
TRACHEA (TR), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08628 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 223.4 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:43 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

P A T H O L O G Y O B S E R V A T I O N S (CONTINUED)

CLINICAL OBSERVATIONS

NECROPSY

HISTOPATHOLOGY

LIVER (LI) :

- INFLAMMATION, SUBACUTE, -MINIMAL
- EXTRAMEDULLARY HEMATOPOIESIS,
 INCREASED, -MINIMAL

LUNG (LU) :

- PERIBRONCHIAL/PERIVASCULAR,
 INFILTRATION, LYMPHOID, -MINIMAL

PARATHYROID (PT) :

- UNILATERALLY EXAMINED, -PRESENT

THYMUS (TH) :

> TISSUE MISSING

URINARY BLADDER (UB) :

- INFLAMMATION, SUBACUTE, -MODERATELY
 SEVERE

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808628 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 223.4 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:43 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.092	.0414 %	.0468	WEIGHT TAKEN
OVARY (OV)	.205	.0919 %	.1040	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.97	.883 %	1.000	WEIGHT TAKEN
HEART (HT)	1.05	.470 %	.532	WEIGHT TAKEN
SPLEEN (SP)	.90	.402 %	.455	WEIGHT TAKEN
KIDNEY (KD)	4.24	1.897 %	2.147	WEIGHT TAKEN
LIVER (LI)	12.72	5.692 %	6.443	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

HISTOPATHOLOGY

JEJUNUM (JE) :
-DARK AREA; IN WALL, DIFFUSE, RED
-LUMEN, MATERIAL; MODERATE AMOUNT, THICK, DARK RED
KIDNEY (KD) :
-PALE; BOTH, TAN
-GRANULAR/PITTED/ROUGH; BOTH, PITTED, SLIGHTLY
-ENLARGED; BOTH, SLIGHTLY
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

CECUM (CE) :
-DILATATION,-PRESENT
HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
-FIBROSIS,-MINIMAL
JEJUNUM (JE) :
>UNREMARKABLE
KIDNEY (KD) :
-TUBULE, REGENERATION,-MODERATELY SEVERE
-FOCAL MONONUCLEAR CELL INFILTRATE,-MODERATELY SEVERE
-INTERSTITIUM, FIBROSIS,-MODERATELY SEVERE
-TRANSITIONAL EPITHELIUM, HYPERPLASIA,-MODERATE
-SUPPURATIVE PYELITIS,-MODERATE
-HYALINE CAST,-MODERATELY SEVERE
-NEPHROPATHY, CHRONIC PROGRESSIVE,-MODERATELY SEVERE
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08627 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 252.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 13:48 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08627

SEX: FEMALE

DOSE GROUP: 1

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/21/86

STUDY DAY OF DEATH: 96

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 252.4 GRAMS

DATE AND TIME OF NECROPSY: 07/21/86 13:48

PROSECTOR: LINDA RUMBLE

REORDER: TIM GROVE

POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.087	.0345 %	.0402	WEIGHT TAKEN
OVARY (OV)	.150	.0595 %	.0693	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.17	.859 %	1.000	WEIGHT TAKEN
HEART (HT)	.99	.391 %	.455	WEIGHT TAKEN
SPLEEN (SP)	.45	.176 %	.205	WEIGHT TAKEN
KIDNEY (KD)	2.30	.911 %	1.060	WEIGHT TAKEN
LIVER (LI)	9.00	3.564 %	4.148	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

-FATTY CHANGE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR MACROPHAGES,-MODERATE

APPENDIX B

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08626 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 321.0 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:55 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08626
DATE OF DEATH: 07/21/86
DATE AND TIME OF NECROPSY: 07/21/86 9:55
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 96
PROSECTOR: BARBARA DAY
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

DOSE GROUP: 1
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 321.0 GRAMS
RECORDED: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
MAMMARY GLAND (MG) :
>TISSUE MISSING
OVARY (OV) :
-AMYLIDOSIS,-MODERATE

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08625 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 278.3 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 13:44 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (MG),
OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OU), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808625
DATE OF DEATH: 07/21/86
DATE AND TIME OF NECROPSY: 07/21/86 13:44
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 96
PROSECTOR: BARBARA DAY
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

DOSE GROUP: 1
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 278.3 GRAMS
REORDER: TIM GROVE
WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.062	.0221 %	.0323	WEIGHT TAKEN
OVARY (OV)	.117	.0419 %	.0612	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.91	.685 %	1.000	WEIGHT TAKEN
HEART (HT)	.76	.272 %	.397	WEIGHT TAKEN
SPLEEN (SP)	.62	.221 %	.323	WEIGHT TAKEN
KIDNEY (KD)	1.74	.626 %	.914	WEIGHT TAKEN
LIVER (LI)	6.27	2.252 %	3.286	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
PARATHYROID (PT):
-UNILATERALLY EXAMINED, -PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08624 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 269.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 13:28 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LIVER (LI),
LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYMUS (TH), THYROID (TY), TRACHEA (TR), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08624
DATE OF DEATH: 07/21/86
DATE AND TIME OF NECROPSY: 07/21/86 13:28
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL
SEX: FEMALE
STUDY DAY OF DEATH: 96
DOSE GROUP: 1
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
PROSECTOR: LINDA RUMBLE
TERMINAL BODY WEIGHT: 269.9 GRAMS
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
RECORDER: TIM GROVE
WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.088	.0325 %	.0412	WEIGHT TAKEN
OVARY (OV)	.185	.0686 %	.0872	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.12	.787 %	1.000	WEIGHT TAKEN
HEART (HT)	1.11	.412 %	.523	WEIGHT TAKEN
SPLEEN (SP)	.90	.332 %	.422	WEIGHT TAKEN
KIDNEY (KD)	4.90	1.815 %	2.306	WEIGHT TAKEN
LIVER (LI)	12.07	4.472 %	5.680	WEIGHT TAKEN

CLINICAL OBSERVATIONS

APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

KIDNEY (KD):
-PALE; BOTH, TAN
-GRANULAR/PITTED/ROUGH; BOTH, PITTED, MODERATELY
-ENLARGED; BOTH

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT):
-FIBROSIS,-MINIMAL
KIDNEY (KD):
-TUBULE, REGENERATION,-MODERATELY SEVERE
-FOCAL MONONUCLEAR CELL INFILTRATE,-MODERATELY SEVERE
-INTERSTITIUM, FIBROSIS,-MODERATELY SEVERE
-NEPHROPATHY, CHRONIC PROGRESSIVE,-MODERATELY SEVERE
LACRIMAL GL, EXO (EO):
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-NECROSIS, INDIVIDUAL CELL,-MINIMAL LUNG (LU):
-PERIBRONCHIAL/PERTVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
URINARY BLADDER (UB):
-LUMEN, PROTEINACIOUS MATERIAL,-MODERATE

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08623 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 331.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:07 PROSECTOR: LINDA RUMBLE RECORDED: RICARDO QUANDER, DUM, DACUP
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XN)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08623 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 331.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:07 PROSECTOR: LINDA RUMBLE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.066	.0199 %	.0326	WEIGHT TAKEN
OVARY (OV)	.129	.0388 %	.0636	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.03	.611 %	1.000	WEIGHT TAKEN
HEART (HT)	.98	.295 %	.483	WEIGHT TAKEN
SPLEEN (SP)	.81	.245 %	.401	WEIGHT TAKEN
KIDNEY (KD)	2.20	.663 %	1.085	WEIGHT TAKEN
LIVER (LI)	7.61	2.296 %	3.758	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LUNG (LU) :
-INFLAMMATION, SUBACUTE,-MINIMAL
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOTO,-MINIMAL
MAMMARY GLAND (MG) :
>TISSUE MISSING

APPENDIX 8

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08622 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 281.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:12 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08622 SEX: FEMALE DOSE GROUP: 1 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 94 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 281.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:12 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.060	.0213 %	.0268	WEIGHT TAKEN
OVARY (OV)	.117	.0416 %	.0522	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.24	.796 %	1.000	WEIGHT TAKEN
HEART (HT)	1.08	.384 %	.482	WEIGHT TAKEN
SPLEEN (SP)	.81	.288 %	.362	WEIGHT TAKEN
KIDNEY (KD)	2.12	.753 %	.946	WEIGHT TAKEN
LIVER (LI)	7.28	2.587 %	3.250	WEIGHT TAKEN

CLINICAL OBSERVATIONS PATHOLOGY OBSERVATIONS HISTOPATHOLOGY

APPEARED NORMAL GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT
PARATHYROID (PT):
-UNILATERALLY EXAMINED,-PRESENT
UTERUS (UT):
-DILATATION,-PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808741 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 583.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:02 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP),
ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08741
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 9:02
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 4

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 583.2 GRAMS

PROSECTOR: DOUGLAS HERNDON

RECORDER: KIM LINCOLN

PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, CORTEX (AC) :
-HYPERTROPHY, -SLIGHT
HEART (HT) :
-INFLAMMATION, SUBACUTE, -MINIMAL
-FIBROSIS, -SLIGHT
KIDNEY (KD) :
-TUBULE, REGENERATION, -MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE, -MODERATE
-DEGENERATION, -MODERATE
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
-INFLAMMATION, SUBACUTE, -SLIGHT
-FATTY CHANGE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR, -MINIMAL
-INFLAMMATION, SUBACUTE, -SLIGHT

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808740 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 433.8 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:14 PROSECTOR: DOUGLAS HERNDON REORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), PANCREAS (PA),
PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808740 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 433.8 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:14 PROSECTOR: DOUGLAS HERNDON
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.073	.0168 %	.0332	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.20	.507 %	1.000	WEIGHT TAKEN
HEART (HT)	1.18	.272 %	.536	WEIGHT TAKEN
SPLEEN (SP)	.69	.159 %	.314	WEIGHT TAKEN
KIDNEY (KD)	3.63	.837 %	1.650	WEIGHT TAKEN
LIVER (LI)	12.93	2.981 %	5.877	WEIGHT TAKEN
TESTIS/EPIDID (TP)	4.90	1.130 %	2.227	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
MAMMARY GLAND (MG):
>SECTION EXAMINED; TISSUE NOT PRESENT
NERVE, SCIATIC (SN):
-UNILATERALLY EXAMINED,-PRESENT
PARATHYROID (PT):
-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR):
-LUMEN, DEBRIS, CELLULAR,-MODERATE
-INFLAMMATION, SUBACUTE,-MODERATE

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08739 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 545.9 GRAMS
DATE OF DEATH: 06/24/86 STUDY DAY OF DEATH: 69 STUDY WEEK OF DEATH: 10 RECORDER: BARBARA DAY
DATE AND TIME OF NECROPSY: 06/24/86 11:25 PROSECTOR: BARBARA DAY WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ~COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08739
DATE OF DEATH: 06/24/86
DATE AND TIME OF NECROPSY: 06/24/86 11:25
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE
DOSE GROUP: 4
STUDY WEEK OF DEATH: 10
PROSECTOR: BARBARA DAY
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 545.9 GRAMS
REORDER: BARBARA DAY
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

LUNG (LU) :

-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-PELVIS, DILATATION,-SLIGHT
LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL
-HYALINE INCLUSION, CYTOPLASMIC,-SLIGHT
LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-CONGESTION,-SLIGHT
-EDEMA,-SLIGHT

PROSTATE (PR) :

-LUMEN, DEBRIS, CELLULAR,-MINIMAL
SEMINAL VESICLE (SV) :

-LUMEN, DEBRIS, CELLULAR,-SLIGHT

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08738 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 396.9 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 12:14 PROSECTOR: TIM GROVE REORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08738
DATE OF DEATH: 07/23/86
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 98
PROSECTOR: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

DOSE GROUP: 4
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 396.9 GRAMS
REORDER: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-MALOCCLUSION

PATHOLOGY OBSERVATIONS
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL
OBSERVATIONS: MALOCCLUSION

HISTOPATHOLOGY

EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE, -MINIMAL
KIDNEY (KD) :
-INTERSTITIUM, FIBROSIS, -MINIMAL
-TRANSITIONAL EPITHELIUM, HYPERPLASIA, -
MODERATE
-SUPPURATIVE PYELITIS, -MODERATELY
SEVERE
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR, -MINIMAL
-INFLAMMATION, CHRONIC ACTIVE, -MODERATE

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08737 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 512.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 11:06 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SU), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
PAGE: 304

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08737
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 11:06
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 4

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 512.1 GRAMS

PROSECTOR: DOUGLAS HERNDON

REORDER: KIM LINCOLN

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08736 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 512.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:07 PROSECTOR: DOUGLAS HERNDON RECORDED: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO GUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808736
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 10:07
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 98
PROSECTOR: DOUGLAS HERNOON
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

DOSE GROUP: 4
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
TERMINAL BODY WEIGHT: 512.3 GRAMS
RECORDED: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE: EXTERNAL OBSERVATIONS: NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION, -MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
PITUITARY (PI) :
-FOCAL DEGENERATION, -MINIMAL
STOMACH, NONGL (SU) :
-ACANTHOSIS, -SLIGHT

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08735 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 501.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:27 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI),
PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08735 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 501.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:27 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

- APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMYIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
EYE (EY) :
-UNILATERALLY EXAMINED, -PRESENT
KIDNEY (KD) :
-TUBULE, REGENERATION, -MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
-FATTY CHANGE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
NERVE, SCIATIC (SN) :
-UNILATERALLY EXAMINED, -PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08734 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 475.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:26 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP),
ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI),
LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBinate (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP),
ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PANCREAS (PA), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808734 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 475.5 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:26 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

HISTOPATHOLOGY

CECUM (CE) :
-MUCOSA, DARK; RED
COLON (CO) :
-INTUSSUSCEPTED; ONE, 6.0 CM FROM
CECUM, 1.0 X 1.0 CM
>NOTE:>INTUSSUSCEPTION APPEARS AGONAL
^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

CECUM (CE) :
-DILATATION,-PRESENT
COLON (CO) :
-DILATATION,-PRESENT
KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08733 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 529.1 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 13:31 PROSECTOR: BARBARA DAY REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), PROSTATE (PR),
RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808733 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY WEEK OF DEATH: 14
DATE AND TIME OF NECROPSY: 07/22/86 13:31 PROSECTOR: BARBARA DAY
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP
WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.057	.0108 %	.0270	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.11	.398 %	1.000	WEIGHT TAKEN
HEART (HT)	1.41	.267 %	.672	WEIGHT TAKEN
SPLEEN (SP)	.82	.195 %	.390	WEIGHT TAKEN
KIDNEY (KD)	3.58	.676 %	1.699	WEIGHT TAKEN
LIVER (LI)	15.17	2.868 %	7.206	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.31	1.003 %	2.520	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, MEDULLA (AM) :
-UNILATERALLY EXAMINED,-PRESENT
EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
KIDNEY (KD) :
-TUBULE, REGENERATION,-SLIGHT
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808732 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 489.9 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:45 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: LINDA RUMBLE

HISTOPATHOLOGY

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
NERVE, SCIATIC (SN) :
-UNILATERALLY EXAMINED,-PRESENT
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL
STOMACH, NONGL (SU) :
-ACANTHOSIS,-MODERATE
THYMUS (TH) :
-CYST,-PRESENT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), SKIN (SK), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
TESTIS (TE), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
PAGE: 294

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08732 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 489.9 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:45 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.070	.0142 %	.0294	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.37	.484 %	1.000	WEIGHT TAKEN
HEART (HT)	1.51	.308 %	.637	WEIGHT TAKEN
SPLEEN (SP)	.89	.181 %	.373	WEIGHT TAKEN
KIDNEY (KD)	4.11	.839 %	1.732	WEIGHT TAKEN
LIVER (LI)	14.92	3.046 %	6.292	WEIGHT TAKEN
TESTIS/EPIDID (TP)	6.05	1.235 %	2.552	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

BONE, FEMUR (FE) :
-ARTICULAR SURFACE, NOT PRESENT, -PRESENT
EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
HEART (HT) :
-INFLAMMATION, SUBACUTE, -SLIGHT
KIDNEY (KD) :
-TUBULE, REGENERATION, -SLIGHT
-FOCAL MONONUCLEAR CELL INFILTRATE, -SLIGHT
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE, -MINIMAL
-DEGENERATION, -SLIGHT
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08731 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 515.1 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:04 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SU), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08731
DATE OF DEATH: 07/22/86
DATE AND TIME OF NECROPSY: 07/22/86 9:04
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 4

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 515.1 GRAMS

PROSECTOR: DOUGLAS HERNDON

RECORDER: TIM GROVE

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
SLIGHT
KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE,-MODERATE
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
-FATTY CHANGE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08730 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 485.3 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:13 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), TESTIS (TE), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08730 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14
DATE AND TIME OF NECROPSY: 07/22/86 8:13 PROSECTOR: BARBARA DAY
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP RECORDER: TIM GROVE
WEIGHER: BARBARA DAY

STUDY NUMBER: 2399110

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.044	.0091 %	.0215	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.06	.425 %	1.000	WEIGHT TAKEN
HEART (HT)	1.39	.287 %	.676	WEIGHT TAKEN
SPLEEN (SP)	.74	.153 %	.360	WEIGHT TAKEN
KIDNEY (KD)	3.45	.711 %	1.674	WEIGHT TAKEN
LIVER (LI)	12.71	2.620 %	6.172	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.27	1.087 %	2.560	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

STOMACH, NONGL (SU) :
-WALL, THICKENED; SLIGHTLY
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATION:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE,-SLIGHT
-DEGENERATION,-SLIGHT
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
PANCREAS (PA) :
-INDIVIDUAL CELL DEGENERATION/NECROSIS,-MINIMAL
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT
STOMACH, NONGL (SU) :
-ACANTHOSIS,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 398.2 GRAMS
REORDER: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
STUDY WEEK OF DEATH: 5
PROSECTOR: KIM LINCOLN
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

ANIMAL NUMBER: B08729
SEX: MALE
STUDY DAY OF DEATH: 34
DATE OF DEATH: 05/20/86
DATE AND TIME OF NECROPSY: 05/20/86 10:30
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), (SG),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), EXO (EO),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08729
DATE OF DEATH: 05/20/86
DATE AND TIME OF NECROPSY: 05/20/86 10:30
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 34
PROSECTOR: KIM LINCOLN
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 398.2 GRAMS
REORDER: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

LUNG (LU) :

-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, DARK RED TO LIGHT
RED

-FLUID FILLED; ALL LOBES

GENERAL INFORMATION (XX) :

>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE. DIED AFTER
GAVAGING

HISTOPATHOLOGY

EYE (EY) :

-PERIORBITAL SUBACUTE INFLAMMATION,-
PRESENT

>NOTE:>PERIORBITAL INFLAMMATION WAS
UNILATERAL AND LIKELY SECONDARY
TO BLOOD COLLECTION.

KIDNEY (KD) :

-TUBULE, REGENERATION,-SLIGHT

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

-HYALINE INCLUSION, CYTOPLASMIC,-
MODERATE

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL

PARATHYROID (PT) :

-UNILATERALLY EXAMINED,-PRESENT

SEMINAL VESICLE (SV) :

-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08728 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 391.6 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:28 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP),
ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08728
DATE OF DEATH: 07/21/86
DATE AND TIME OF NECROPSY: 07/21/86 11:28
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 96

DOSE GROUP: 4
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
PROSECTOR: LINDA RUMBLE
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

TERMINAL BODY WEIGHT: 391.6 GRAMS
RECORDER: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

BONE, FEMUR (FE) :
-ARTICULAR SURFACE, NOT PRESENT,
PRESENT
HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
KIDNEY (KD) :
-TUBULE, REGENERATION,-MODERATE
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INTERSTITIUM, FIBROSIS,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PARATHYROID (PT) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08727 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 390.0 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:24 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SN), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SN), NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), PROSTATE (PR),
RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT
STUDY NUMBER: 2399110

ANIMAL NUMBER: B08727
SEX: MALE
DOSE GROUP: 4
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86
STUDY DAY OF DEATH: 96
WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 390.0 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:24
PROSECTOR: KIM LINCOLN
RECORDED: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S	
CLINICAL OBSERVATIONS	HISTOPATHOLOGY
- APPEARED NORMAL	EPIDIDYMIS (EP) : - FOCAL MONONUCLEAR CELL INFILTRATE, - MINIMAL HEART (HT) : - FIBROSIS, - MINIMAL KIDNEY (KD) : - FOCAL MONONUCLEAR CELL INFILTRATE, - MINIMAL LACRIMAL GL, EXO (EO) : - TISSUE MISSING LIVER (LI) : - PORTAL MONONUCLEAR CELL INFILTRATE, - MINIMAL - INFLAMMATION, SUBACUTE, - MINIMAL LUNG (LU) : - PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, - SLIGHT MAMMARY GLAND (MG) : - SECTION EXAMINED; TISSUE NOT PRESENT PARATHYROID (PT) : - UNILATERALLY EXAMINED, - FINDING MISSING THYMUS (TH) : - TISSUE MISSING

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08726 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 481.7 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:50 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), *COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

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SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08726 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 481.7 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: KIM LINCOLN REORDER: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.093	.0193 %	.0374	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.48	.516 %	1.000	WEIGHT TAKEN
HEART (HT)	1.56	.323 %	.627	WEIGHT TAKEN
SPLEEN (SP)	.80	.166 %	.322	WEIGHT TAKEN
KIDNEY (KD)	3.98	.826 %	1.601	WEIGHT TAKEN
LIVER (LI)	13.76	2.856 %	5.539	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.19	1.078 %	2.091	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMS (EP):
-FOCAL MONONUCLEAR CELL INFILTRATE, MINIMAL
KIDNEY (KD):
-FOCAL MONONUCLEAR CELL INFILTRATE, MINIMAL
-TRANSITIONAL EPITHELIUM, HYPERPLASIA, SLIGHT
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE, MINIMAL
-INFLAMMATION, SUBACUTE, SLIGHT
-FATTY CHANGE, MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, MINIMAL
MAMMARY GLAND (MG):
>SECTION EXAMINED; TISSUE NOT PRESENT
PANCREAS (PA):
-INFLAMMATION, SUBACUTE, MINIMAL
PROSTATE (PR):
-LUMEN, DEBRIS, CELLULAR, MINIMAL

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SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08725 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 345.7 GRAMS
DATE OF DEATH: 05/19/86 STUDY DAY OF DEATH: 33 STUDY WEEK OF DEATH: 5 RECORDER: KIM LINCOLN
DATE AND TIME OF NECROPSY: 05/19/86 11:42 PROSECTOR: KIM LINCOLN PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), KIDNEY (KD),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA),
PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08725
DATE OF DEATH: 05/19/86
DATE AND TIME OF NECROPSY: 05/19/86 11:42
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE
STUDY DAY OF DEATH: 33
PROSECTOR: KIM LINCOLN
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
SACRIFICE STATUS: UNSCHEDULED (0)
TERMINAL BODY WEIGHT: 345.7 GRAMS
RECORDED: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

LIVER (LI):

-PALE AREA; ALL LOBES, SEVERAL, TAN, 7
X 5 MM TO 5 X 5 MM TO 4 X 3 MM

LUNG (LU):

-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, DARK TO LIGHT RED
GENERAL INFORMATION (XX):

>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMIS (EP):

-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

HEART (HT):

-ATRIA, DILATATION,-MODERATELY SEVERE
KIDNEY (KD):

-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INTERSTITIUM, FIBROSIS,-MINIMAL

LACRIMAL GL, EXO (EO):

-INFLAMMATION, SUBACUTE,-MINIMAL

LIVER (LI):

-HYALINE INCLUSION, CYTOPLASMIC,-SLIGHT
LUNG (LU):

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT

>NOTE:>MOTTLED LUNG APPEARANCE WAS
SECONDARY TO POST MORTEM CHANGE.

PARATHYROID (PT):

-UNILATERALLY EXAMINED,-PRESENT

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SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08724 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 436.4 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 8:47 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV),
SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808724 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 436.4 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.054	.0124 %	.0243	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.23	.511 %	1.000	WEIGHT TAKEN
HEART (HT)	1.24	.285 %	.558	WEIGHT TAKEN
SPLEEN (SP)	.75	.172 %	.336	WEIGHT TAKEN
KIDNEY (KD)	3.40	.778 %	1.525	WEIGHT TAKEN
LIVER (LI)	12.13	2.780 %	5.446	WEIGHT TAKEN
TESTIS/EPIDID (TP)	4.84	1.109 %	2.173	WEIGHT TAKEN

CLINICAL OBSERVATIONS
-APPEARED NORMAL

GENERAL INFORMATION (XX) :
>NOTE: >EXTERNAL OBSERVATIONS: NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION, -MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -MINIMAL
-PERIBRON/PERIVAS, INFILT, NEUTROPHILS, -MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
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SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

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STUDY NUMBER: 2399110

ANIMAL NUMBER: B08723 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 513.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 9:20 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SU), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08723

SEX: MALE

DOSE GROUP: 4

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/21/86

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 513.9 GRAMS

PROSECTOR: KIM LINCOLN

RECORDER: TIM GROVE

POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

^COLLECTED/TAKEN (XW) :

-ELECTRON MICROSCOPY SAMPLE; LIVER

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :

-TUBULE, REGENERATION,-MODERATE

-FOCAL MONONUCLEAR CELL INFILTRATE,-
SLIGHT

-INTERSTITIUM, FIBROSIS,-SLIGHT

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

-CONGESTION,-MODERATE

PROSTATE (PR) :

-LUMEN, DEBRIS, CELLULAR,-MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08722 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 06/10/86 STUDY DAY OF DEATH: 55 STUDY WEEK OF DEATH: 8 TERMINAL BODY WEIGHT: 418.1 GRAMS
DATE AND TIME OF NECROPSY: 06/10/86 16:55 PROSECTOR: BARBARA DAY RECORDER: BARBARA DAY
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS),
MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN),
PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808722 SEX: MALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 06/10/86 STUDY WEEK OF DEATH: 8
DATE AND TIME OF NECROPSY: 06/10/86 16:55 PROSECTOR: BARBARA DAY TERMINAL BODY WEIGHT: 418.1 GRAMS
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL RECORDER: BARBARA DAY
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

LUNG (LU) :

-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS: RED DISCHARGE
AROUND NARES. DIED AFTER
GAUAGING.

HISTOPATHOLOGY

KIDNEY (KO) :

-TUBULE, REGENERATION, -MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE, -
SLIGHT

-INTERSTITIUM, FIBROSIS, -SLIGHT
LACRIMAL GL, EXO (EO) :

-INFLAMMATION, SUBACUTE, -MINIMAL
LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL

-INFLAMMATION, SUBACUTE, -MINIMAL
-CONGESTION, -MODERATELY SEVERE
LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -SLIGHT
-INTRA-ALVEOLAR FOREIGN MATERIAL, -
PRESENT

PARATHYROID (PT) :

>SECTION EXAMINED; TISSUE NOT PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR, -MINIMAL

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08701 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 606.6 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:52 PROSECTOR: TIM GROVE REORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08701 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14
DATE AND TIME OF NECROPSY: 07/23/86 9:52 PROSECTOR: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP RECORDER: KIM LINCOLN
WEIGHTER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.044	.0073 %	.0228	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.93	.318 %	1.000	WEIGHT TAKEN
HEART (HT)	1.30	.214 %	.674	WEIGHT TAKEN
SPLEEN (SP)	.74	.122 %	.383	WEIGHT TAKEN
KIDNEY (KD)	3.65	.602 %	1.891	WEIGHT TAKEN
LIVER (LI)	19.76	3.258 %	10.238	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.28	.870 %	2.736	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KO) :

-TUBULE, REGENERATION,-SLIGHT
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-HYALINE CAST,-MINIMAL
LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL
-NECROSIS, INDIVIDUAL CELL,-SLIGHT
-HEPATOCYTE, HYPERTROPHY,-SLIGHT
LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-PERIBRON/PERIVAS, INFILT, NEUTROPHILS,-
MINIMAL

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

ANIMAL NUMBER: B08700 SEX: MALE

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 562.0 GRAMS

DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98

REORDER: KIM LINCOLN

DATE AND TIME OF NECROPSY: 07/23/86 11:34

PROSECTOR: PENNIE PAGE

WEIGHER: NOT REQUIRED BY PROTOCOL

POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

HISTOPATHOLOGY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PANCREAS (PA) :

-GELATINOUS

TESTIS (TE) :

-SOFT; RIGHT

^COLLECTED/TAKEN (XW) :

-ELECTRON MICROSCOPY SAMPLE; LIVER

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

KIDNEY (KD) :

-FOCAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

-INFLAMMATION, SUBACUTE,-SLIGHT

-FATTY CHANGE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

-PNEUMONIA, INTERSTITIAL,-MODERATE

PANCREAS (PA) :

>UNREMARKABLE

TESTIS (TE) :

>UNREMARKABLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), THYMUS (TH), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2397110

ANIMAL NUMBER: B08699
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 11:05
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 3

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 536.8 GRAMS

PROSECTOR: PENNIE PAGE

RECORDED: KIM LINCOLN

PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08698 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 511.5 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:13 PROSECTOR: PENNIE PAGE RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERUICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08697 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 445.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:15 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

*** NO ORGANS/TISSUES WERE RECORDED AS HAVING BEEN SAVED ***

STUDY NUMBER: 2399110

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808697 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 445.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:15 PROSECTOR: TIM GROVE RECORDED: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	O R G A N	
				S T A T U S	
ADRENAL (AD)	.050	.0112 %	.0228	WEIGHT TAKEN	
BRAIN W/STEM (BR)	2.19	.492 %	1.000	WEIGHT TAKEN	
HEART (HT)	1.26	.283 %	.575	WEIGHT TAKEN	
SPLEEN (SP)	.73	.164 %	.333	WEIGHT TAKEN	
KIDNEY (KD)	3.57	.802 %	1.630	WEIGHT TAKEN	
LIVER (LI)	12.98	2.916 %	5.927	WEIGHT TAKEN	
TESTIS/EPIDID (TP)	4.62	1.038 %	2.110	WEIGHT TAKEN	

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

HISTOPATHOLOGY

CLINICAL OBSERVATIONS

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

KIDNEY (KD):

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

LIVER (LI):

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU):

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808696

SEX: MALE

DOSE GROUP: 3

SACRIFICE STATUS: UNSCHEDULED (D)

TERMINAL BODY WEIGHT: 603.0 GRAMS

REORDER: JAMES CANNON

WEIGHER: NOT REQUIRED BY PROTOCOL

STUDY WEEK OF DEATH: 11

PROSECTOR: JAMES CANNON

PATHOLOGIST: NOT REQUIRED BY PROTOCOL

STUDY DAY OF DEATH: 71

DATE OF DEATH: 06/26/86

TIME OF NECROPSY: 06/26/86 15:50

POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
DUODENUM (DU), EPIDIDYMIS (EP), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), JEJUNUM (JE), KIDNEY (KD),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), MAND SALIVARY GL (SG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO),
CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES),
EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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STUDY NUMBER: 2399110

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08696 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 603.0 GRAMS
DATE OF DEATH: 06/26/86 STUDY DAY OF DEATH: 71 STUDY WEEK OF DEATH: 11 RECORDER: JAMES CANNON
DATE AND TIME OF NECROPSY: 06/26/86 15:50 PROSECTOR: JAMES CANNON WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

LUNG (LU) :
-MOTTLED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

ADRENAL, CORTEX (AC) :
-UNILATERALLY EXAMINED,-PRESENT
ADRENAL, MEDULLA (AM) :
-UNILATERALLY EXAMINED,-PRESENT
KIDNEY (KD) :
-TUBULE, REGENERATION,-SLIGHT
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE,-MINIMAL
-DEGENERATION,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LJ) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT
-PIGMENT, BROWN,-PRESENT
MAMMARY GLAND (MG) :
>SECTION EXAMINED; TISSUE NOT PRESENT
PARATHYROID (PT) :
-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-SLIGHT
-INFLAMMATION, SUBACUTE,-MODERATE
SEMINAL VESICLE (SV) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08695
DATE OF DEATH: 07/23/86
DATE AND TIME OF NECROPSY: 07/23/86 8:51
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 3
STUDY WEEK OF DEATH: 14
PROSECTOR: BARBARA DAY
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

TERMINAL BODY WEIGHT: 568.5 GRAMS

RECORDER: KIM LINCOLN

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

KIDNEY (KD) :

-H-PELVIS, DILATED; RIGHT, SLIGHTLY.

TESTIS (TE) :

-SOFT; RIGHT

-UNEQUALLY SIZED; RIGHT, SMALL

-COLLECTED/TAKEN (XW) :

-ELECTRON MICROSCOPY SAMPLE; LIVER

GENERAL INFORMATION (XX) :

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMIS (EP) :

-UNILATERAL ATROPHY,-MODERATELY SEVERE

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL

-FOCAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-

MINIMAL

-INFLAMMATION, SUBACUTE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

-INTRA-ALVEOLAR MACROPHAGES,-SLIGHT

TESTIS (TE) :

-UNILATERAL ATROPHY,-MODERATELY SEVERE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),

BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),

DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),

LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),

MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),

PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),

SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), THYMUS (TH), THYROID (TY), TRACHEA (TR),

URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08694 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 418.8 GRAMS
DATE OF DEATH: 05/16/86 STUDY DAY OF DEATH: 30 STUDY WEEK OF DEATH: 5 RECORDER: KIM LINCOLN
DATE AND TIME OF NECROPSY: 05/16/86 11:05 PROSECTOR: KIM LINCOLN WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), KIDNEY (KD),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB), ^COLLECTED/TAKEN (XM)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY),
HEART (HT), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI),
PROSTATE (PR), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08694 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 05/16/86 STUDY DAY OF DEATH: 30 STUDY WEEK OF DEATH: 5 TERMINAL BODY WEIGHT: 418.8 GRAMS
DATE AND TIME OF NECROPSY: 05/16/86 11:05 PROSECTOR: KIM LINCOLN RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-RIGHT EAR-SORE

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

LIVER (LI) :

-MOTTLED; LEFT LATERAL LOBE, RIGHT
LATERAL LOBE, MEDIAN LOBE, PAPILLARY
PROCESS, MARGINS, TAN TO DARK RED
LUNG (LU) :

-FAILURE TO COLLAPSE; ALL LOBES,
PARTIALLY
-MOTTLED; ALL LOBES, LIGHT RED TO DARK
RED

SKIN, OTHER (SS) :

-SORE; RIGHT EAR, ONE, CRUSTY, RED, 4
X 2 MM

GENERAL INFORMATION (XX) :

>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:RIGHT EAR-SORE,
LEFT INTACT

HISTOPATHOLOGY

ADRENAL, MEDULLA (AM) :
-UNILATERALLY EXAMINED,-PRESENT
DUODENUM (DU) :
>AUTOLYTIC
ILEUM (IL) :
>AUTOLYTIC
JECUNUM (JE) :
>AUTOLYTIC
KIDNEY (KO) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-CYST,-PRESENT
LIVER (LI) :
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL
-CONGESTION,-MODERATE
SEMINAL VESICLE (SV) :
>AUTOLYTIC
SKIN, OTHER (SS) :
-INFLAMMATION, CHRONIC ACTIVE,-
MODERATELY SEVERE
STOMACH, GL (ST) :
>AUTOLYTIC

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08693 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 05/20/86 STUDY DAY OF DEATH: 34 STUDY WEEK OF DEATH: 5 TERMINAL BODY WEIGHT: 457.4 GRAMS
DATE AND TIME OF NECROPSY: 05/20/86 11:35 PROSECTOR: KIM LINCOLN RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYROID (TY), TRACHEA (TR),
URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NERVE, SCIATIC (SN),
PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08693
DATE OF DEATH: 05/20/86
DATE AND TIME OF NECROPSY: 05/20/86 11:35
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 3

SACRIFICE STATUS: UNSCHEDULED (D)

STUDY WEEK OF DEATH: 5

PROSECTOR: KIM LINCOLN

TERMINAL BODY WEIGHT: 457.4 GRAMS

REORDER: KIM LINCOLN

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-RIGHT EAR-SORE

PATHOLOGY OBSERVATIONS

NECROPSY

LUNG (LU) :

-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, DARK RED TO LIGHT
RED

SKIN, OTHER (SS) :

-SORE; RIGHT EAR, ONE, CRUSTY, RED, 4
X 2 MM

GENERAL INFORMATION (XX) :

>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:RIGHT EAR-SORE,
LEFT INTACT

HISTOPATHOLOGY

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

-INFLAMMATION, SUBACUTE,-SLIGHT

-HYALINE INCLUSION, CYTOPLASMIC,-SLIGHT
LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-SLIGHT

-INTRA-ALVEOLAR MACROPHAGES,-MINIMAL

-CONGESTION,-SLIGHT

MAMMARY GLAND (MG) :

>SECTION EXAMINED; TISSUE NOT PRESENT
PARATHYROID (PT) :

-UNILATERALLY EXAMINED,-PRESENT
PROSTATE (PR) :

-INFLAMMATION, SUBACUTE,-MINIMAL
SEMINAL VESICLE (SV) :

-LUMEN, DEBRIS, CELLULAR,-MINIMAL
SKIN, OTHER (SS) :

-EAR, AURICULAR CHONDROPATHY,-PRESENT

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STUDY NUMBER: 2399110

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08692 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 500.4 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:14 PROSECTOR: KIM LINCOLN RECORDER: TIM GROUE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: KIM LINCOLN

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08692
DATE OF DEATH: 07/22/86
DATE AND TIME OF NECROPSY: 07/22/86 8:14
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

SEX: MALE

DOSE GROUP: 3

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 500.4 GRAMS
RECORDED: TIM GROVE
WEIGHER: KIM LINCOLN

PROSECTOR: KIM LINCOLN

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.060	.0120 %	.0270	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.22	.444 %	1.000	WEIGHT TAKEN
HEART (HT)	1.06	.212 %	.477	WEIGHT TAKEN
SPLEEN (SP)	1.16	.231 %	.520	WEIGHT TAKEN
KIDNEY (KD)	3.47	.694 %	1.563	WEIGHT TAKEN
LIVER (LI)	12.50	2.498 %	5.621	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.38	1.075 %	2.419	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-MALOCCLUSION

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):
>NOTE: >EXTERNAL

OBSERVATIONS: MALOCCLUSION

HISTOPATHOLOGY

KIDNEY (KD):
-TUBULE, REGENERATION, -MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
-INFLAMMATION, SUBACUTE, -SLIGHT
-FATTY CHANGE, -MINIMAL
-COAGULATIVE NECROSIS, -MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID, -SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), >COLLECTED/TAKEN (XU)

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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08691 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 628.3 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 13:29 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: DOUGLAS HERNDON

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808691 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 628.3 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 13:29 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.069	.0110 %	.0307	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.24	.357 %	1.000	WEIGHT TAKEN
HEART (HT)	1.96	.312 %	.874	WEIGHT TAKEN
SPLEEN (SP)	.98	.155 %	.435	WEIGHT TAKEN
KIDNEY (KO)	3.98	.634 %	1.775	WEIGHT TAKEN
LIVER (LI)	15.56	2.476 %	6.935	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.70	.907 %	2.541	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-RIGHT EYE-CHROMODACRYORRHEA, OPAQUE

PATHOLOGY OBSERVATIONS
NECROPSY

EYE (EY) :
-EXTERNAL, OPAQUE; RIGHT
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:RIGHT EYE-CHROMODACRYORRHEA, OPAQUE

HISTOPATHOLOGY

EYE (EY) :
-PANOPHTHALMITIS,-MODERATELY SEVERE
KIDNEY (KO) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-SLIGHT
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08690 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 455.6 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 11:05 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08689 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 605.6 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:12 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXD (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08688 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 480.9 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:08 PROSECTOR: BARBARA DAY RECORDED: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-MALOCCLUSION

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL
OBSERVATIONS: MALOCCLUSION

HISTOPATHOLOGY

KIDNEY (KD) :
-TRANSITIONAL EPITHELIUM, HYPERPLASIA, -
SLIGHT
-SUPPURATIVE PYELITIS, -MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

APPENDIX 8

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08687 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 532.6 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 11:06 PROSECTOR: DOUGLAS HERNDON RECORDED: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08686 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 534.2 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 13:30 PROSECTOR: KIM LINCOLN RECORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER; DUM, DACVP WEIGHER: KIM LINCOLN

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08686
DATE OF DEATH: 07/21/86
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL
SEX: MALE
STUDY DAY OF DEATH: 96
PROSECTOR: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
DOSE GROUP: 3
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 534.2 GRAMS
RECORDED: TIM GROVE
WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.084	.0157 %		WEIGHT TAKEN
BRAIN W/STEM (BR)	2.27	.424 %	.0370	WEIGHT TAKEN
HEART (HT)	1.67	.312 %	1.000	WEIGHT TAKEN
SPLEEN (SP)	.74	.138 %	.736	WEIGHT TAKEN
KIDNEY (KD)	3.66	.685 %	.325	WEIGHT TAKEN
LIVER (LI)	14.31	2.678 %	1.614	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.28	.988 %	6.314	WEIGHT TAKEN
			2.328	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XM)

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APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08685 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 530.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:44 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808685 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 530.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:44 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.066	.0125 %	.0306	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.17	.409 %	1.000	WEIGHT TAKEN
HEART (HT)	1.55	.291 %	.713	WEIGHT TAKEN
SPLEEN (SP)	.85	.160 %	.391	WEIGHT TAKEN
KIDNEY (KD)	3.42	.644 %	1.575	WEIGHT TAKEN
LIVER (LI)	13.21	2.488 %	6.085	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.79	1.090 %	2.666	WEIGHT TAKEN

CLINICAL OBSERVATIONS

APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
-FOCAL MONONUCLEAR CELL INFILTRATE, MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE, MINIMAL
-INFLAMMATION, SUBACUTE, -SLIGHT
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR INFILTRATION, LYMPHOID, -SLIGHT
-PNEUMONIA, INTERSTITIAL, -SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08684 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 568.5 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 10:18 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808683

SEX: MALE

DOSE GROUP: 3

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

DATE OF DEATH: 07/21/86

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 474.8 GRAMS

DATE AND TIME OF NECROPSY: 07/21/86 9:24

PROSECTOR: BARBARA DAY

REORDER: TIM GROVE

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S

NECROPSY

^COLLECTED/TAKEN (XW) :

-ELECTRON MICROSCOPY SAMPLE; LIVER

GENERAL INFORMATION (XX) :

>NOTE:>>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL

-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

LIVER (LI) :

-INFLAMMATION, SUBACUTE,-MINIMAL

-FATTY CHANGE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERTVASCULAR,

INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

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STUDY NUMBER: 2399110

ANIMAL NUMBER: 808682 SEX: MALE DOSE GROUP: 3 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 510.8 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 8:46 PROSECTOR: BARBARA DAY RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: BARBARA DAY

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08682
DATE OF DEATH: 07/21/86
DATE AND TIME OF NECROPSY: 07/21/86 8:46
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL
SEX: MALE
STUDY DAY OF DEATH: 96
DOSE GROUP: 3
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
PROSECTOR: BARBARA DAY
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 510.8 GRAMS
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
REORDER: TIM GROVE
WEIGHER: BARBARA DAY

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.045	.0088 %	.0225	WEIGHT TAKEN
BRAIN W/STEM (BR)	1.99	.389 %	1.000	WEIGHT TAKEN
HEART (HT)	1.34	.263 %	.677	WEIGHT TAKEN
SPLEEN (SP)	.85	.167 %	.429	WEIGHT TAKEN
KIDNEY (KO)	3.17	.620 %	1.594	WEIGHT TAKEN
LIVER (LI)	17.88	3.500 %	8.995	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.16	1.010 %	2.595	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KO):
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

LIVER (LI):

-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU):

-PERIBRONCHIAL/PERIVASCULAR INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), <COLLECTED>/TAKEN (XW)

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STUDY NUMBER: 2399110

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*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808661 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 498.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 13:35 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

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STUDY NUMBER: 2399110

ANIMAL NUMBER: B08661 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 498.3 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: TIM GROVE REORDER: KIM LINCOLN
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.048	.0096 %	.0238	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.02	.405 %	1.000	WEIGHT TAKEN
HEART (HT)	1.09	.219 %	.540	WEIGHT TAKEN
SPLEEN (SP)	.60	.120 %	.297	WEIGHT TAKEN
KIDNEY (KD)	2.90	.582 %	1.436	WEIGHT TAKEN
LIVER (LI)	10.87	2.181 %	5.381	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.09	1.021 %	2.520	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
-FOCAL MONONUCLEAR CELL INFILTRATE, MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE, MINIMAL
-INFLAMMATION, SUBACUTE, MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR INFILTRATION, LYMPHOID, MINIMAL
-PNEUMONIA, INTERSTITIAL, MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXD (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

HAZLETON LABORATORIES AMERICA, INC.
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*** PATH/TOX SYSTEM OUTPUT ***
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STUDY NUMBER: 2399110

ANIMAL NUMBER: B08660 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 490.5 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:12 PROSECTOR: BARBARA DAY RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-MALOCCLUSION

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL
OBSERVATIONS: MALOCCLUSION

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LT) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMITIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, HONGI (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08659
SEX: MALE
DATE OF DEATH: 07/23/86
STUDY DAY OF DEATH: 98
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 2
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
PROSECTOR: DOUGLAS HERNDON
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP

TERMINAL BODY WEIGHT: 481.5 GRAMS
RECORDED: KIM LINCOLN
WEIGHED: DOUGLAS HERNDON

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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STUDY NUMBER: 2399110

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DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808659 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 481.5 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 13:35 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEIGHER: DOUGLAS HERNDON

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	O R G A N S T A T U S	
				WEIGHT TAKEN	WEIGHT TAKEN
ADRENAL (AD)	.071	.0147 %	.0335	1.000	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.12	.440 %	1.000	.882	WEIGHT TAKEN
HEART (HT)	1.87	.388 %	.495	3.920	WEIGHT TAKEN
SPLEEN (SP)	1.05	.218 %	8.175	2.396	WEIGHT TAKEN
KIDNEY (KD)	8.31	1.726 %			
LIVER (LI)	17.33	3.599 %			
TESTIS/EPIDID (TP)	5.08	1.055 %			

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

APPEARED NORMAL
KIDNEY (KD):
-GRANULAR/PITTED/ROUGH; BOTH, PITTED
-ENLARGED; BOTH
GENERAL INFORMATION (XX):
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
-TUBULE, REGENERATION,-MODERATELY SEVERE
-FOCAL MONONUCLEAR CELL INFILTRATE,-MODERATELY SEVERE
-INTERSTITIUM, FIBROSIS,-MODERATELY SEVERE
-HYALINE CAST,-MODERATELY SEVERE
-NEPHROPATHY, CHRONIC PROGRESSIVE,-MODERATELY SEVERE
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08658 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 561.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:18 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08658 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 561.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:18 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	O R G A N S T A T U S	
				WEIGHT TAKEN	WEIGHT TAKEN
ADRENAL (AD)	.049	.0087 %	.0238	WEIGHT TAKEN	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.06	.367 %	1.000	WEIGHT TAKEN	WEIGHT TAKEN
HEART (HT)	1.41	.251 %	.684	WEIGHT TAKEN	WEIGHT TAKEN
SPLEEN (SP)	.69	.123 %	.335	WEIGHT TAKEN	WEIGHT TAKEN
KIDNEY (KD)	3.88	.691 %	1.883	WEIGHT TAKEN	WEIGHT TAKEN
LIVER (LI)	14.98	2.669 %	7.272	WEIGHT TAKEN	WEIGHT TAKEN
TESTIS/EPIDID (TP)	6.05	1.078 %	2.937	WEIGHT TAKEN	WEIGHT TAKEN

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS	NECROPSY	HISTOPATHOLOGY
-APPEARED NORMAL	GENERAL INFORMATION (XX) : >NOTE:>EXTERNAL OBSERVATIONS:NONE	KIDNEY (KD) : -TUBULE, REGENERATION,-MINIMAL -FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL -INFLAMMATION, SUBACUTE,-MINIMAL -FATTY CHANGE,-MINIMAL LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XM)

HAZLETON LABORATORIES AMERICA, INC.
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APPENDIX B
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SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08657 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 07/11/86 STUDY DAY OF DEATH: 86 STUDY WEEK OF DEATH: 13 TERMINAL BODY WEIGHT: 567.8 GRAMS
DATE AND TIME OF NECROPSY: 07/11/86 14:35 PROSECTOR: BARBARA DAY RECORDER: BARBARA DAY
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EYE (EY), ILEUM (IL), JEJUNUM (JE), LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NERVE, SCIATIC (SN), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI),
RECTUM (RE), SKIN (SK), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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STUDY NUMBER: 2399110

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08657 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: UNSCHEDULED (D) TERMINAL BODY WEIGHT: 567.8 GRAMS
DATE OF DEATH: 07/11/86 STUDY DAY OF DEATH: 86 STUDY WEEK OF DEATH: 13 RECORDER: BARBARA DAY
DATE AND TIME OF NECROPSY: 07/11/86 14:35 PROSECTOR: BARBARA DAY WEIGHER: NOT REQUIRED BY PROTOCOL
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

LUNG (LU) :
-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

EPIDIDYMIS (EP) :
-FOCAL MONONUCLEAR CELL INFILTRATE,-
SLIGHT
ESOPHAGUS (ES) :
-FOCAL MYODEGENERATION,-SLIGHT
HEART (HT) :
-INFLAMMATION, SUBACUTE,-MINIMAL
KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-CONGESTION,-SLIGHT
LACRIMAL GL, EXO (EO) :
-INFLAMMATION, SUBACUTE,-MINIMAL
-DEGENERATION,-MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT
-CONGESTION,-SLIGHT
PROSTATE (PR) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL
SEMINAL VESICLE (SV) :
-LUMEN, DEBRIS, CELLULAR,-MINIMAL

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808656 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 649.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:15 PROSECTOR: PENNIE PAGE RECORDER: KIM LINCOLN
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: PENNIE PAGE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: 808656 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
 DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 649.1 GRAMS
 DATE AND TIME OF NECROPSY: 07/23/86 8:15 PROSECTOR: PENNIE PAGE REORDER: KIM LINCOLN
 POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: PENNIE PAGE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.063	.0097 %	.0278	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.27	.350 %	1.000	WEIGHT TAKEN
HEART (HT)	1.77	.273 %	.780	WEIGHT TAKEN
SPLEEN (SP)	.72	.111 %	.317	WEIGHT TAKEN
KIDNEY (KD)	3.95	.609 %	1.740	WEIGHT TAKEN
LIVER (LI)	18.01	2.775 %	7.934	WEIGHT TAKEN
TESTIS/EPIDID (TP)	4.92	.758 %	2.167	WEIGHT TAKEN

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

GENERAL INFORMATION (XX):
 >NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
 -TUBULE, REGENERATION,-MINIMAL
 -FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
 LIVER (LI):
 -PORTAL MONONUCLEAR CELL INFILTRATE,-MINIMAL
 -INFLAMMATION, SUBACUTE,-MINIMAL
 -FATTY CHANGE,-MINIMAL
 LUNG (LU):
 -PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
 BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERUTICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
 DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
 LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
 MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
 ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
 SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
 THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), >COLLECTED/TAKEN (XW)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08655 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 465.1 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 8:44 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AD), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08654 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 554.4 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 12:03 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP MEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S

CLINICAL OBSERVATIONS

-APPEARED NORMAL

HISTOPATHOLOGY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERUICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08653 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 612.8 GRAMS
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XU)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

ANIMAL NUMBER: B08653 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 612.8 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 13:31 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.059	.0096 %	.0262	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.25	.368 %	1.000	WEIGHT TAKEN
HEART (HT)	1.70	.278 %	.757	WEIGHT TAKEN
SPLEEN (SP)	.84	.137 %	.374	WEIGHT TAKEN
KIDNEY (KD)	3.32	.542 %	1.473	WEIGHT TAKEN
LIVER (LI)	14.20	2.317 %	6.303	WEIGHT TAKEN
TESTIS/EPIDID (TP)	6.88	1.123 %	3.054	WEIGHT TAKEN

CLINICAL OBSERVATIONS	HISTOPATHOLOGY
GENERAL INFORMATION (XX) : >NOTE:>EXTERNAL OBSERVATIONS: MALOCCLUSION	KIDNEY (KD) : -TUBULE: REGENERATION, -MINIMAL -FOCAL MONONUCLEAR CELL INFILTRATE, -MINIMAL
	LIVER (LI) : -PORTAL MONONUCLEAR CELL INFILTRATE, -MINIMAL -INFLAMMATION, SUBACUTE, -MINIMAL -FATTY CHANGE, -MINIMAL
	LUNG (LU) : -PERIBRONCHIAL/PERIVASCULAR, -MINIMAL -INFILTRATION, LYMPHOID, -MINIMAL -PERIBRON/PERIVAS, INFILT, NEUTROPHILS, -MINIMAL

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808652

SEX: MALE

DATE OF DEATH: 07/22/86

STUDY DAY OF DEATH: 97

STUDY WEEK OF DEATH: 14

PROSECTOR: KIM LINCOLN

DATE AND TIME OF NECROPSY: 07/22/86 9:20

POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 2

SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

TERMINAL BODY WEIGHT: 517.8 GRAMS

REORDER: TIM GROVE

WEIGHER: KIM LINCOLN

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

ANIMAL NUMBER: B08652 SEX: MALE

DATE OF DEATH: 07/22/86

STUDY DAY OF DEATH: 14

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 517.8 GRAMS

DATE AND TIME OF NECROPSY: 07/22/86 9:20

PROSECTOR: KIM LINCOLN

REORDER: TIM GROVE

WEIGHER: KIM LINCOLN

POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

WEIGHER: KIM LINCOLN

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS	
				WEIGHT TAKEN	WEIGHT TAKEN
ADRENAL (AD)	.083	.0160 %	.0344	1.000	1.000
BRAIN W/STEM (BR)	2.42	.467 %	.609	.350	.350
HEART (HT)	1.47	.284 %	.163	1.176	1.176
SPLEEN (SP)	.85	.163 %	.549	5.278	5.278
KIDNEY (KO)	2.84	.549 %	2.463	2.231	2.231
LIVER (LI)	12.75	2.463 %	1.041		
TESTIS/EPIDID (TP)	5.39	1.041 %			

PATHOLOGY OBSERVATIONS
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

KIDNEY (KO):

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-MINIMAL

LIVER (LI):

-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL

LUNG (LU):

-PERIBRONCHIAL/PERIVASCULAR, INFILTRATION, LYMPHOID,-MINIMAL
-PNEUMONIA, INTERSTITIAL,-MODERATE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AD), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), KIDNEY (KO),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), KIDNEY (KO),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KO),
LACRIMAL GL, EXD (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, RL (ST), STOMACH, NONAL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), >COLLECTED/TAKEN (XW)

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08651
SEX: MALE
DOSE GROUP: 2
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86
STUDY DAY OF DEATH: 97
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 537.1 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 8:12
PROSECTOR: LINDA RUMBLE
REORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: LINDA RUMBLE

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

STUDY NUMBER: 2399110

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.060	.0112 %	.0256	WEIGHT TAKE
BRAIN W/STEM (BR)	2.36	.440 %	1.000	WEIGHT TAKE
HEART (HT)	1.54	.286 %	.650	WEIGHT TAKE
SPLEEN (SP)	.82	.153 %	.349	WEIGHT TAKE
KIDNEY (KD)	3.69	.686 %	1.561	WEIGHT TAKE
LIVER (LI)	12.85	2.392 %	5.438	WEIGHT TAKE
TESTES (TE)	5.45	1.014 %	2.306	WEIGHT TAKE

NECROPSY

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO), LIVER (LT), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08650 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 505.6 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 10:56 PROSECTOR: DOUGLAS HERNDON RECORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHTER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

LIVER (LI) :
-INFLAMMATION, SUBACUTE,-SLIGHT
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
LACRIMAL GL, EXO (EO), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
ORGANS, MULTIPLE (OG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
SEMINAL VESICLE (SV), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:
KIDNEY (KD)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: B08649 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/22/86 STUDY DAY OF DEATH: 97 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 557.7 GRAMS
DATE AND TIME OF NECROPSY: 07/22/86 9:58 PROSECTOR: DOUGLAS HERNDON REORDER: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
ADRENAL, CORTEX (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
BRAIN W/STEM (BR), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD),
DUODENUM (DU), LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG),
LACRIMAL GL, EXO (EO), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN),
MAND SALIVARY GL (SG), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE),
ORGANS, MULTIPLE (OG), PANCREAS (PA), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE),
SEMINAL VESICLE (SV), SKIN (SK), TRACHEA (TR), URINARY BLADDER (UB)
THYMUS (TH), THYROID (TY)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808648 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 381.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 8:48 PROSECTOR: LINDA RUMBLE RECORDER: TIM GROVE
POST-FTX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: LINDA RUMBLE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), EPIDIDYMIS (EP), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), PROSTATE (PR), RECTUM (RE), SEMINAL VESICLE (SV), SKIN (SK),
SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), TESTIS (TE), THYMUS (TH), THYROID (TY),
TRACHEA (TR), URINARY BLADDER (UB), ^COLLECTED/TAKEN (XW)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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STUDY NUMBER: 2399110

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

ANIMAL NUMBER: 808648 SEX: MALE DOSE GROUP: 2 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/21/86 STUDY DAY OF DEATH: 96 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 381.9 GRAMS
DATE AND TIME OF NECROPSY: 07/21/86 8:48 PROSECTOR: LINDA RUMBLE REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DUM, DACUP WEAHER: LINDA RUMBLE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.088	.0231 %	.0403	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.19	.574 %	1.000	WEIGHT TAKEN
HEART (HT)	1.63	.426 %	.741	WEIGHT TAKEN
SPLEEN (SP)	1.15	.300 %	.523	WEIGHT TAKEN
KIDNEY (KD)	7.84	2.052 %	3.574	WEIGHT TAKEN
LIVER (LI)	16.00	4.188 %	7.296	WEIGHT TAKEN
TESTIS/EPIDID (TP)	5.47	1.433 %	2.497	WEIGHT TAKEN

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

KIDNEY (KD) :
-PALE; BOTH, TAN
-GRANULAR/PITTED/ROUGH; BOTH, PITTED,
SLIGHT
-ENLARGED; BOTH, MODERATELY
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-SEVERE
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MODERATELY SEVERE
-INTERSTITIUM, FIBROSIS,-MODERATELY
SEVERE
-HYALINE CAST,-SEVERE
-NEPHROPATHY, CHRONIC PROGRESSIVE,-
SEVERE
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08756

SEX: FEMALE

DOSE GROUP: 4

SACRIFICE STATUS: UNSCHEDULED (D)

DATE OF DEATH: 07/18/86

STUDY DAY OF DEATH: 93

STUDY WEEK OF DEATH: 14

TERMINAL BODY WEIGHT: 218.6 GRAMS

DATE AND TIME OF NECROPSY: 07/18/86 15:00

PROSECTOR: BARBARA DAY

REORDER: BARBARA DAY

POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

PATHOLOGIST: NOT REQUIRED BY PROTOCOL

WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXD (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OU), PANCREAS (PA),
PARATHYROID (PT), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXD (EO), LIVER (LI),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OU), PARATHYROID (PT), RECTUM (RE), SKIN (SK), STOMACH, GL (ST), STOMACH, NONGL (SU),
THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08757 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 14 TERMINAL BODY WEIGHT: 265.7 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 10:48 PROSECTOR: BARBARA DAY
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

P A T H O L O G Y O B S E R V A T I O N S
NECROPSY

CLINICAL OBSERVATIONS

-APPEARED NORMAL

HISTOPATHOLOGY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

LIVER (LI) :

-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -SLIGHT

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808758
SEX: FEMALE
DATE OF DEATH: 07/23/86
STUDY DAY OF DEATH: 98
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
STUDY WEEK OF DEATH: 14
PROSECTOR: DOUGLAS HERNDON
PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

TERMINAL BODY WEIGHT: 284.3 GRAMS
RECORDED: KIM LINCOLN
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

^COLLECTED/TAKEN (XW) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

BONE, FEMUR (FE) :
-ARTICULAR SURFACE, NOT PRESENT, -
PRESENT
KIDNEY (KD) :
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
MUSCLE, SKELETAL (SM) :
>TISSUE MISSING
NERVE, SCIATIC (SN) :
>TISSUE MISSING
PARATHYROID (PT) :
-UNILATERALLY EXAMINED, -PRESENT

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08758 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 284.3 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 11:40 PROSECTOR: DOUGLAS HERNDON RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACUP WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SK), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, STERNUM (SB), BRAIN W/STEM (BR), CECUM (CE),
COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC), DUODENUM (DU), ESOPHAGUS (ES), EYE (EY),
HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO), LN, MESENTERIC (MS), MAMMARY GLAND (MG),
MAND SALIVARY GL (SG), MARROW, STERNUM (SE), OVARY (OV), PANCREAS (PA), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

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INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: 808759
DATE OF DEATH: 07/18/86
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
STUDY DAY OF DEATH: 93
PROSECTOR: BARBARA DAY
PATHOLOGIST: NOT REQUIRED BY PROTOCOL

DOSE GROUP: 4
SACRIFICE STATUS: UNSCHEDULED (D)
TERMINAL BODY WEIGHT: 332.8 GRAMS
RECORDED: TIM GROVE
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS

NECROPSY

LUNG (LU) :

-FAILURE TO COLLAPSE; ALL LOBES
-MOTTLED; ALL LOBES, LIGHT TO DARK RED
GENERAL INFORMATION (XX) :
>NOTE:>LAST IN-LIFE AND EXTERNAL
OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :

-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
SLIGHT

LIVER (LI) :

-INFLAMMATION, ACUTE,-MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
-FATTY CHANGE,-MINIMAL

LUNG (LU) :

-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
-INTRA-ALVEOLAR FOREIGN MATERIAL,-
PRESENT
-CONGESTION,-SLIGHT

APPENDIX B
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

INDIVIDUAL ANIMAL SUMMARY REPORT

ANIMAL NUMBER: B08759 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: UNSCHEDULED (D)
DATE OF DEATH: 07/18/86 STUDY DAY OF DEATH: 93 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 332.8 GRAMS
DATE AND TIME OF NECROPSY: 07/18/86 15:33 PROSECTOR: BARBARA DAY REORDER: TIM GROVE
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: NOT REQUIRED BY PROTOCOL WEIGHT: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE),
MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG), OVARY (OV), PANCREAS (PA),
PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), OTHER (SS), SPLEEN (SP), STOMACH, GL (ST),
STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT), ^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB),
UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

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DEPARTMENT OF PATHOLOGY

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS

PRINTED: 04-MAY-88
PAGE: 447

INDIVIDUAL ANIMAL SUMMARY REPORT

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08760 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14
DATE AND TIME OF NECROPSY: 07/23/86 9:00 PROSECTOR: TIM GROVE
POST-FIX WEIGHER: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP RECORDER: KIM LINCOLN
WEIGHER: TIM GROVE

ORGAN NAME	ABSOLUTE ORGAN WEIGHT (GRAMS)	ORGAN WEIGHT RELATIVE TO BODY WEIGHT (%)	ORGAN TO BRAIN WEIGHT RATIO	ORGAN STATUS
ADRENAL (AD)	.057	.0220 %	.0282	WEIGHT TAKEN
OVARY (OU)	.101	.0391 %	.0500	WEIGHT TAKEN
BRAIN W/STEM (BR)	2.02	.781 %	1.000	WEIGHT TAKEN
HEART (HT)	.83	.321 %	.411	WEIGHT TAKEN
SPLEEN (SP)	.50	.193 %	.248	WEIGHT TAKEN
KIDNEY (KD)	2.05	.793 %	1.015	WEIGHT TAKEN
LIVER (LI)	7.77	3.005 %	3.847	WEIGHT TAKEN

CLINICAL OBSERVATIONS

-APPEARED NORMAL

PATHOLOGY OBSERVATIONS
NECROPSY

GENERAL INFORMATION (XX):

>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD):
-FOCAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
LIVER (LI):
-PORTAL MONONUCLEAR CELL INFILTRATE, -
MINIMAL
-INFLAMMATION, SUBACUTE, -MINIMAL
LUNG (LU):
-PERIBRONCHIAL/PERIVASCULAR,
INFILTRATION, LYMPHOID, -MINIMAL
PANCREAS (PA):
-INFLAMMATION, SUBACUTE, -MINIMAL

APPENDIX 8
*** PATH/TOX SYSTEM OUTPUT ***
SUBCHRONIC TOXICITY STUDY IN RATS
INDIVIDUAL ANIMAL SUMMARY REPORT

HAZLETON LABORATORIES AMERICA, INC.
DEPARTMENT OF PATHOLOGY

STUDY NUMBER: 2399110

ANIMAL NUMBER: B08760 SEX: FEMALE DOSE GROUP: 4 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86 STUDY DAY OF DEATH: 98 STUDY WEEK OF DEATH: 14 TERMINAL BODY WEIGHT: 258.6 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 9:00 PROSECTOR: TIM GROVE RECORDER: KIM LINCOLN
POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL PATHOLOGIST: RICARDO QUANDER, DVM, DACVP WEIGHER: TIM GROVE

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL, EXO (EO),
LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
OVARY (OV), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT),
^COLLECTED/TAKEN (XW)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL, EXO (EO),
LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
NERVE, SCIATIC (SN), OVARY (OV), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SPLEEN (SP),
STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), THYROID (TY), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***

INDIVIDUAL ANIMAL SUMMARY REPORT
STUDY NUMBER: 2399110

ANIMAL NUMBER: B08761
SEX: FEMALE
DOSE GROUP: 4
SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE
DATE OF DEATH: 07/23/86
STUDY WEEK OF DEATH: 14
TERMINAL BODY WEIGHT: 283.2 GRAMS
DATE AND TIME OF NECROPSY: 07/23/86 11:57
PROSECTOR: PENNIE PAGE
REORDER: KIM LINCOLN
POST-FIX WEIGHTER: NOT REQUIRED BY PROTOCOL
PATHOLOGIST: RICARDO QUANDER, DVM, DACUP
WEIGHER: NOT REQUIRED BY PROTOCOL

*** ANIMAL HAS NO ORGAN WEIGHTS RECORDED ***

PATHOLOGY OBSERVATIONS

CLINICAL OBSERVATIONS

-APPEARED NORMAL

NECROPSY

^COLLECTED/TAKEN (XM) :
-ELECTRON MICROSCOPY SAMPLE; LIVER
GENERAL INFORMATION (XX) :
>NOTE:>EXTERNAL OBSERVATIONS:NONE

HISTOPATHOLOGY

KIDNEY (KD) :
-TUBULE, REGENERATION,-MINIMAL
-FOCAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
LIVER (LI) :
-PORTAL MONONUCLEAR CELL INFILTRATE,-
MINIMAL
-INFLAMMATION, SUBACUTE,-MINIMAL
LUNG (LU) :
-PERIBRONCHIAL/PERTVASCULAR,
INFILTRATION, LYMPHOID,-MINIMAL
URINARY BLADDER (UB) :
>TISSUE MISSING

ANIMAL NUMBER: B08761
 DATE OF DEATH: 07/23/86
 DATE AND TIME OF NECROPSY: 07/23/86 11:57
 POST-FIX WEIGHT: NOT REQUIRED BY PROTOCOL

SEX: FEMALE
 STUDY DAY OF DEATH: 98
 PROSECTOR: PENNIE PAGE
 PATHOLOGIST: RICARDO QUANDER, DVM, DACVP

DOSE GROUP: 4
 STUDY WEEK OF DEATH: 14
 SACRIFICE STATUS: SCHEDULED, TERMINAL SACRIFICE

TERMINAL BODY WEIGHT: 283.2 GRAMS
 RECORDER: KIM LINCOLN
 WEIGHER: NOT REQUIRED BY PROTOCOL

THE FOLLOWING ORGANS WERE UNREMARKABLE AT NECROPSY:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
 BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
 DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), KIDNEY (KD), LACRIMAL GL., EXO (EO),
 LIVER (LI), LN, MESENTERIC (MS), LN, OTHER (LN), LUNG (LU), MAMMARY GLAND (MG), MAND SALIVARY GL (SG),
 MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM), NASAL TURBINATE (NT), NERVE, SCIATIC (SN), ORGANS, MULTIPLE (OG),
 OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK), SKIN, OTHER (SS), SPLEEN (SP),
 STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), URINARY BLADDER (UB), UTERUS (UT)

THE FOLLOWING TISSUES WERE UNREMARKABLE AT MICROSCOPIC EXAMINATION:

ADRENAL, CORTEX (AC), ADRENAL, MEDULLA (AM), AORTA, THORACIC (AO), BONE, FEMUR (FE), BONE, STERNUM (SB),
 BRAIN W/STEM (BR), CECUM (CE), COLON (CO), CORD, CERVICAL (CS), CORD, LUMBAR (LC), CORD, THORACIC (TC),
 DUODENUM (DU), ESOPHAGUS (ES), EYE (EY), HEART (HT), ILEUM (IL), JEJUNUM (JE), LACRIMAL GL., EXO (EO),
 LN, MESENTERIC (MS), MAMMARY GLAND (MG), MAND SALIVARY GL (SG), MARROW, STERNUM (SE), MUSCLE, SKELETAL (SM),
 NERVE, SCIATIC (SN), OVARY (OU), PANCREAS (PA), PARATHYROID (PT), PITUITARY (PI), RECTUM (RE), SKIN (SK),
 SPLEEN (SP), STOMACH, GL (ST), STOMACH, NONGL (SU), THYMUS (TH), TRACHEA (TR), UTERUS (UT)

*** ALL ORGANS/TISSUES (REQUIRED TO BE HARVESTED PER THE STUDY PROTOCOL) WERE SAVED ***



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APPENDIX 9

Analytical Chemistry Report



SPONSOR: DYNAMAC CORPORATION.

MATERIAL: P-XYLENE (P-XYLOL) CAS 106-42-3

SUBJECT: FINAL REPORT
Subchronic Toxicity Study
p-Xylene in Corn Oil Gavage Formulations
Project No. 2399-110

1. OBJECTIVE:

The purpose of this study was to perform chemical analyses of corn oil gavage formulations to determine dose concentrations of p-xylene in preparations used for toxicity testing in rats.

2. MATERIAL:

The p-xylene used in this study, Lot #235 855, was obtained from Fluka Chemical Corporation, Hauppauge, New York. It was received in three shipments (March 6, April 17, and April 30, 1986) and assigned LH Nos. 10,032A, B, and C. The manufacturer's stated purity was 99%.

3. METHOD AND PROCEDURES

A. Method

The method for the determination of p-xylene in corn oil gavage preparations was developed by Hazleton Biotechnologies Company. In brief, p-xylene is extracted from the corn oil by shaking with methanol. Following centrifugation, appropriate dilutions are made of the extracts, incorporating n-propylbenzene as the internal standard. The extracts are analyzed by gas chromatography (GC) using a flame ionization detector. Matrix standard solutions carried through the procedure are used for the standard curve and instrument calibration. The complete method is included in this report in Attachment A.

Analysis of corn oil for peroxides was performed using a modification of the Official Method Cd. 8-53 of the A.O.C.S. (1972). It determines all substances, in terms of milliequivalents (meq) of peroxide per 1000 grams of sample, which oxidize aqueous iodide under the conditions of the test. The complete method is included in Attachment A.



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3. METHOD AND PROCEDURES (Continued)

B. Procedures

The chemical characterization of the test material was performed prior to the study start. Identity was determined using infrared (IR), nuclear magnetic resonance (NMR), and mass spectrometry (MS) spectral techniques. Elemental analysis and the determination of water using the Karl Fischer technique were also carried out. A gas chromatographic (GC) scan was run to assess the purity of the chemical.

Upon receipt of the test material, aliquots were taken and stored at -20°C for use as reference standards for subsequent reanalysis. At the end of the study, GC scans for purity were performed on the bulk chemical and the reference standard to assess the integrity of the test chemical under the storage conditions during the study.

The initial method validation was performed on matrix standards at 4 levels of concentration (excluding 0). Four standards were prepared at the high and low levels and a single standard at each midpoint. Linear regression analysis was carried out on the results of the standard curve.

In addition, analyses of gavage preparations at the high and low levels of concentration were carried out on two different days to show linearity, precision, accuracy, and reproducibility of the method.

Stability of p-xylene in the corn oil gavage preparations at the high and low dosage concentrations was determined after 7, 14, and 21 days of storage at room temperature and at 5°C.

Dose verification analyses of the corn oil gavage formulations were performed at Weeks 1, 5, 9, and 13 of the study.

Each batch of corn oil used for the preparation of gavage dosing formulations was analyzed for peroxides prior to its first use and at monthly intervals thereafter.

4. RESULTS AND CONCLUSIONS

The purity and identity data for the chemical characterization of the test material are presented in this report as Attachment B.

Tables 1 and 2 contain the analytical method validation data for the determination of p-xylene in corn oil gavage formulations. The RSDs for the four analyses at the high and low points on the standard curve, $\pm 0.24\%$ and



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4. RESULTS AND CONCLUSION (Continued)

+ 0.29%, respectively, show excellent precision. The correlation coefficients presented in both tables demonstrate linearity within the range of 0.20 to 1.0 ug p-xylene injected.

Analyses of the gavage samples at the high and low dose concentrations on different days show good method reproducibility and accuracy.

Stability data for p-xylene in corn oil gavage formulations at 40.4 and 323.2 mg/mL concentrations stored at 5°C and room temperature are presented in Tables 3 and 4. After 21 days there was no loss for samples stored at 5°C and a mean loss of 0.9% for those stored at room temperature. These data clearly demonstrate the stability of p-xylene in corn oil required for this study.

Results of the dose verification analyses of the gavage preparations for p-xylene can be found in Table 5. All of the samples analyzed were within the acceptable + 10% of target concentration. Nine of twelve samples had < 1.5% agreement between duplicate analyses.

Table 6 presents a summary of the analyses performed to determine peroxides in corn oil. For this study, corn oil with a peroxide number equal to or greater than 10 meq/kg was considered rancid and not acceptable for use. The peroxide number for each analysis was well below the acceptable limit. Copies of the individual reports are included to provide detailed information about the corn oil used and the cumulative results of testing.

Reported by:

Lee Hohing
Lee Hohing
Research Associate

12-19-86
Date

Approved by:

Susan A. Lewis
Susan A. Lewis, Ph.D.
Staff Scientist

PROJECT NO. 2399-110

TABLE 1

ANALYTICAL METHOD VALIDATION DATA FOR P-XYLENE MATRIX STANDARD PREPARATIONS

P-XYLENE INJECTED (ug)	P-XYLENE FOUND (FROM THE CALIBRATION STANDARD CURVE) (ug)
1.00	$\bar{x} = 1.005$ $SD = + 0.0024$ $RSD = \pm 0.24\%$ 1.006 1.003 1.003 1.008
0.80	0.793
0.40	0.402
0.20	$\bar{x} = 0.201$ $SD = + 0.0006$ $RSD = \pm 0.29\%$ 0.201 0.200 0.201 0.200

Linear Regression Analysis Using Area Ratio:

Correlation coefficient: 0.9999
Intercept : (-)0.0030
Slope : 0.8996



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TABLE 2

ANALYTICAL METHOD VALIDATION DATA FOR THE DETERMINATION
OF P-XYLENE IN CORN OIL GAVAGE FORMULATIONS

SAMPLE IDENTIFICATION	TARGET VALUE (mg/mL)	DATE ANALYZED	ASSAY VALUE (mg/mL)	PERCENT OF TARGET
Control	0.00	4/03/86	N.D.	N/A
RO-0279-86A	40.40	4/03/86	38.55	95.42
RO-0279-86B	40.40	4/03/86	38.45	95.17
RO-0280-86A	323.2	4/03/86	315.5	97.62
RO-0280-86B	323.2	4/03/86	317.0	98.08
Control	0.00	4/04/86	N.D.	N/A
RO-0279-86A	40.40	4/04/86	38.75	95.92
RO-0279-86B	40.40	4/04/86	38.55	95.42
RO-0280-86A	323.2	4/04/86	312.0	96.53
RO-0280-86B	323.2	4/04/86	316.0	97.77

STANDARD CURVE STATISTICAL ANALYSIS

Date of Analysis (date extracted):	4/03/86	4/04/86
Correlation Coefficient	: 0.9999	0.9999
Intercept	: (-)0.0022	(-)0.0013
Slope	: 0.9088	0.9063

N.D. = None Detected
N/A = Not Applicable

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PROJECT NO. 2399-110

TABLE 3

STABILITY OF P-XYLENE IN CORN OIL GAVAGE FORMULATIONS STORED AT 5°C

SAMPLE IDENTIFICATION	DATE FORMULATED	DATE ANALYZED	STORAGE PERIOD	TARGET VALUE (mg/mL)	ASSAY VALUE (mg/mL)	PERCENT OF ORIGINAL \bar{x} VALUE
R0-0279-86A R0-0279-86B	4/03/86	4/03/86	None	40.40 40.40	38.55 38.45 $\bar{x} = 38.50$	N/A N/A
R0-0280-86A R0-0280-86B	4/03/86	4/03/86	None	323.2 323.2	315.5 317.0 $\bar{x} = 316.3$	N/A N/A
R0-0279-86A R0-0279-86B	4/03/86	4/10/86	7 Days	40.40 40.40	39.95 40.10	104 104
R0-0280-86A R0-0280-86B	4/03/86	4/10/86	7 Days	323.2 323.2	323.0 322.5	102 102
R0-0279-86A R0-0279-86B	4/03/86	4/17/86	14 Days	40.40 40.40	38.80 38.25	101 99.4
R0-0280-86A R0-0280-86B	4/03/86	4/17/86	14 Days	323.2 323.2	308.5 309.5	97.5 97.9
R0-0279-86A R0-0279-86B	4/03/86	4/24/86	21 Days	40.40 40.40	38.95 38.15	101 99.1
R0-0280-86A R0-0280-86B	4/03/86	4/24/86	21 Days	323.2 323.2	316.0 316.5	99.9 100

N/A = Not Applicable

L:50/7-3



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PROJECT NO. 2399-110

TABLE 4

STABILITY OF P-XYLENE IN CORN OIL GAVAGE FORMULATIONS STORED AT ROOM TEMPERATURE

SAMPLE IDENTIFICATION	DATE FORMULATED	DATE ANALYZED	STORAGE PERIOD	TARGET VALUE (mg/mL)	ASSAY VALUE (mg/mL)	PERCENT ORIGINAL \bar{x} VALUE
R0-0279-86A R0-0279-86B	4/03/86	4/03/86	None	40.40 40.40	38.55 38.45 $\bar{x} = 38.50$	N/A N/A
R0-0280-86A R0-0280-86B	4/03/86	4/03/86	None	323.2 323.2	315.5 317.0 $\bar{x} = 316.3$	N/A N/A
R0-0279-86A R0-0279-86B	4/03/86	4/10/86	7 Days	40.40 40.40	40.90 40.95	106 106
R0-0280-86A R0-0280-86B	4/03/86	4/10/86	7 Days	323.2 323.2	326.0 324.0	103 102
R0-0279-86A R0-0279-86B	4/03/86	4/17/86	14 Days	40.40 40.40	38.90 38.70	101 101
R0-0280-86A R0-0280-86B	4/03/86	4/17/86	14 Days	323.2 323.2	309.5 309.0	97.9 97.7
R0-0279-86A R0-0279-86B	4/03/86	4/24/86	21 Days	40.40 40.40	38.00 38.85	98.7 101
R0-0280-86A R0-0280-86B	4/03/86	4/24/86	21 Days	323.2 323.2	313.5 308.5	99.1 97.5

N/A = Not Applicable



PROJECT NO. 2399-110

TABLE 5

DETERMINATION OF P-XYLENE IN CORN OIL
GAVAGE PREPARATIONS TO VERIFY DOSAGE CONCENTRATION

SAMPLE IDENTIFICATION	DATE FORMULATED	DATE ANALYZED	INTERVAL	TARGET VALUE (mg/mL)	ASSAY VALUE (mg/mL)	PERCENT OF TARGET
RO-0299-86	4-10-86	4-16-86	Week 1	0.00	N.D.	N/A
RO-0300-86A	4-10-86	4-16-86	"	40.40	39.75	98.39
RO-0300-86B	4-10-86	4-16-86	"	40.40	39.70	98.27
RO-0301-86A	4-10-86	4-16-86	"	80.80	80.70	99.88
RO-0301-86R	4-10-86	4-16-86	"	80.80	81.60	101.0
RO-0302-86A	4-11-86	4-16-86	"	323.2	324.0	100.2
RO-0302-86B	4-11-86	4-16-86	"	323.2	328.0	101.5
RO-0408-86	5-08-86	5-12-86	Week 5	0.00	N.D.	N/A
RO-0409-86A	5-08-86	5-12-86	"	40.40	38.15	94.43
RO-0409-86B	5-08-86	5-12-86	"	40.40	39.25	97.15
RO-0410-86A	5-08-86	5-12-86	"	80.80	77.90	96.41
RO-0410-86R	5-08-86	5-12-86	"	80.80	75.70	93.69
RO-0411-86A	5-08-86	5-12-86	"	323.2	312.5	96.69
RO-0411-86R	5-08-86	5-12-86	"	323.2	303.0	93.75
RO-0525-86	6-04-86	6-05-86	Week 9	0.00	N.D.	N/A
RO-0526-86A	6-04-86	6-05-86	"	40.40	38.35	94.93
RO-0526-86B	6-04-86	6-05-86	"	40.40	38.70	95.79
RO-0527-86A	6-04-86	6-05-86	"	80.80	77.30	95.67
RO-0527-86B	6-04-86	6-05-86	"	80.80	76.50	94.68
RO-0528-86A	6-04-86	6-05-86	"	323.2	313.5	97.00
RO-0528-86B	6-04-86	6-05-86	"	323.2	311.0	96.23
RO-0717-86	7-02-86	7-03-86	Week 13	0.00	N.D.	N/A
RO-0718-86A	7-02-86	7-03-86	"	40.40	39.05	96.66
RO-0718-86B	7-02-86	7-03-86	"	40.40	39.45	97.65
RO-0719-86A	7-02-86	7-03-86	"	80.80	79.40	98.27
RO-0719-86R	7-02-86	7-03-86	"	80.80	79.70	98.64
RO-0720-86A	7-02-86	7-03-86	"	323.2	317.5	98.24
RO-0720-86B	7-02-86	7-03-86	"	323.2	321.5	99.47

N.D. = None Detected
N/A = Not Applicable

L:50/7-5



PROJECT NO. 2399-110

TABLE 6

ANALYSES OF CORN OIL FOR PEROXIDE DETERMINATION

<u>SAMPLE IDENTIFICATION</u>	<u>DATE OF ANALYSIS</u>	<u>PEROXIDE NUMBER FROM EACH INDIVIDUAL TITRATION (meq/kg)</u>
RO-0318-86	04-21-86	1.11 1.07 1.04 $\bar{x} = \frac{1.07}{1.07} \pm 0.035 \text{ S.D.}$
RO-0454-86	05-19-86	1.14 1.14 1.13 $\bar{x} = \frac{1.13}{1.14} \pm 0.006 \text{ S.D.}$
RO-0588-86	06-20-86	1.37 1.37 1.37 $\bar{x} = \frac{1.37}{1.37} \pm 0.000 \text{ S.D.}$
RO-0810-86	07-16-86	1.63 1.64 1.63 $\bar{x} = \frac{1.63}{1.63} \pm 0.006 \text{ S.D.}$



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ATTACHMENT A

1. Determination of p-Xylene in Corn Oil Gavage
(Analytical Method No. 164)
2. Analysis of Corn Oil for Peroxides; Modification of the
Official Method of the American Oil Chemists' Society

HAZLETON

BIOTECHNOLOGIES COMPANY

HAZLETON BIOTECHNOLOGIES CORPORATION
10111 LEBESQUE TURNPIKE VIENNA, MO 64082 U.S.A.

PROJECT # 2399-110

DIAGNOSTIC ASSAYS DEPARTMENT
ANALYTICAL CHEMISTRY LABORATORY

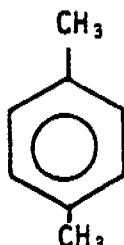
ANALYTICAL METHOD NO. 164

PAGE 1 OF 7

DATE: March 24, 1986
APPROVAL: Susan A. Lewis

TITLE: Determination of P-Xylene in Corn Oil Gavage

STRUCTURE:



Para-xylene

DEVELOPED BY: Hazleton Biotechnologies Company, a Division of Hazleton Laboratories Corporation

1.0 SCOPE

This method is for the gas chromatographic (GC) analysis of p-xylene in corn oil gavage at levels from 40 mg/mL to 320 mg/mL.

2.0 PRINCIPLE

P-Xylene is extracted from the corn oil by shaking with methanol. The extracts are analyzed by gas chromatography (GC) using a flame ionization detector (FID).



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ANALYTICAL METHOD NO. 164

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DATE: March 24, 1986

3.0 EQUIPMENT

- 3.1 Gas Chromatograph: Hewlett-Packard 5880A, equipped with a flame ionization detector (FID), a HP 5880A terminal, and a HP 7672A autosampler, or equivalent
- 3.2 Glass Column: 6 ft x 2 mm packed with GP 5% SP-1200/1.75% Bentone 34 on 100/120 Supelcoport, or equivalent
- 3.3 Polypropylene Tubes: Falcon 2070 blue max 50 mL
- 3.4 Analytical Balance: Mettler H31AR, or equivalent
- 3.5 Shaker Box: Equipoise heavy duty, or equivalent
- 3.6 SMI pipets: 0.1 mL & 0.5 mL SMI pipets, or equivalent
- 3.7 Centrifuge: International centrifuge, model K, or equivalent
- 3.8 General laboratory glassware

4.0 REAGENTS

- 4.1 Methanol: Baker "HPLC Grade", or equivalent
- 4.2 P-Xylene Standard: Supplied by sponsor, 99% purity. Stored at 5°C.
- 4.3 N-Propylbenzene Internal Standard: Supplied by Kodak, catalog no. 1132224, lot no. A13B, stored at 5°C.


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DATE: March 24, 1986

5.0 PROCEDURE

5.1 Standard Preparation

5.1.1 Preparation of Stock standard solutions

Stock Standard Solution I (10.0 mg/mL): Weigh accurately 500 mg of standard p-xylene (adjust for purity) into a 50 mL volumetric flask. Dissolve and bring to volume with methanol.

Stock Standard Solution II (20.0 mg/mL): Weigh accurately 1000 mg of standard p-xylene (adjust for purity) into a 50 mL volumetric flask. Dissolve and bring to volume with methanol.

5.1.2 Preparation of stock internal standard

Weigh accurately 250 mg of the internal standard n-propylbenzene into a 50 mL volumetric flask. Dissolve and bring to volume with methanol. This internal standard contains 5 mg/mL of propylbenzene.

5.1.3 Preparation of Working Matrix Standard Solutions

Prepare the working matrix standard solutions in 50 mL polypropylene tubes as follows:

<u>Std. Soln. No.</u>	<u>mL Undosed Corn Oil</u>	<u>mL Stock Std. I</u>	<u>mL Stock Std. II</u>	<u>mL Methanol</u>	<u>Conc. of Extract mg/mL</u>
1	0.5	1	-	9	1.0
2	0.5	-	1	9	2.0
3	0.5	-	2	8	4.0
4	0.5	5	-	5	5.0

Shake polypropylene tubes on floor shaker for 5 minutes.

Centrifuge at 2500 rpm for 5 minutes.



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ANALYTICAL METHOD NO. 164

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DATE: March 24, 1986

Dilute extract as follows:

Std. Soln. No.	mL Extract	mL Stock Internal Std.	mL Methanol	Final Concentration (mg/mL) p-xylene	ISTD
1	1	1	8	0.1	0.5
2	1	1	8	0.2	0.5
3	1	1	8	0.4	0.5
4	1	1	8	0.5	0.5

Inject 2 μ L of each working matrix standard for standard curve and calibrate.

5.2 Sample Preparation

5.2.1 Pipet 0.5 mL of sample into 50 mL polypropylene tubes.

5.2.2 Pipet 10 mL methanol into each sample tube.

5.2.3 Shake sample tubes on floor shaker for 5 minutes.

5.2.4 Centrifuge at 2500 rpm for 5 minutes.

5.2.5 Make dilutions of the extracts with methanol in 10 mL volumetric flask as follows:

Level	mL Extract	mL Internal Std.	Final Conc. (mg/mL) p-xylene	ISTD
Control	2	1	0.1	0.5
40 mg/mL	2	1	0.2	0.5
80 mg/mL	1	1	0.4	0.5
320 mg/mL	0.2	1	0.5	0.5

5.2.6 Bring to 10 mL volume mark with methanol.

5.2.7 Inject 2 μ L of sample on GC-FID.

5.2.8 Extracts should be refrigerated if not analyzed on the same day.



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DATE: March 24, 1986

5.3 Sample Calculation

5.3.1 The Hewlett-Packard GC terminal is programmed to calculate the amount of p-xylene injected from peak area using internal standard procedure for calculating the chromatographic data. The calibration table is generated by analyzing the chromatographic standards listed in 5.1.3.

5.3.2

$$\text{mg detected} = \frac{\mu\text{g detected}}{\text{mL sample injected}}$$

$$\text{percent target} = \frac{\text{mg detected}}{\text{target}} \times 100$$

$$\text{where mL sample inj.} = \text{inj. vol.} \times \frac{\text{mL sample}}{\text{extraction volume}} \times \frac{\text{aliquot taken for dil.}}{\text{final dil. vol.}}$$



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ANALYTICAL METHOD NO. 164

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DATE: March 24, 1986

7.0 INSTRUMENT PARAMETERS

Gas Chromatograph : Hewlett-Packard 5880A with flame ionization detector, a HP 5880A terminal, and a HP 7672A autosampler, or equivalent

Column : 6 ft x 2 mm glass column packed with GP 5% SP-1200/1.75% Bentone 34 on 100/120 Supelcoport, or equivalent

Gas Flow

Carrier Gas : Helium, ~30 mL/min

Detector Gas : Air, ~60 mL/min

Hydrogen, ~30 mL/min

Temperature

Oven : 75°C

Detector : 280°C

Injection Port : 150°C

Injection Volume : 2 µL

Chart Speed : 0.25 cm/min

Quantitation : Peak Area Ratio

Retention Time : Approx. 4.5 minutes for p-xylene; ~8 minutes for ISTD

NOTE: The above conditions may be changed to optimize the instrument response and sample detection.



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ANALYTICAL METHOD NO. 164

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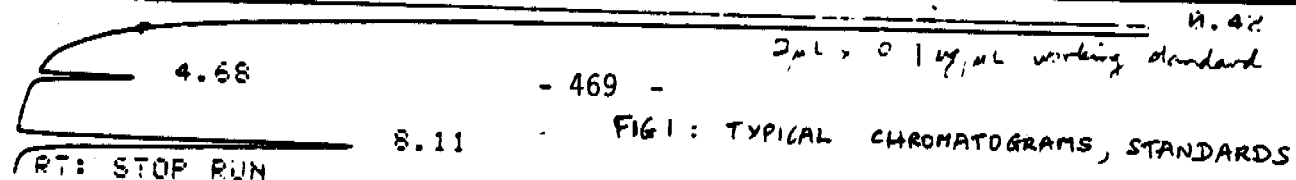
DATE: March 24, 1986

8.0 LIST OF FIGURES

Figure 1. Typical chromatograms, standards

Figure 2. Typical standard curve

Figure 3. Typical chromatograms, samples



HP 5880A SAMPLER INJECTION @ 15:15 APR 17, 1986
 SAMPLE # : ID CODE :

2
 PROJ. 2399-110 DAY 14 STAB AT RT% 5 DEG
 ISTD

RT	EXP RT	AREA	TYPE	WIDTH	CAL	AMOUNT	NAME
0.00		BASELINE @ START RUN = 7.30					
0.00		THRESHOLD @ START RUN = 4					
0.00		PEAK WIDTH @ START RUN = 0.08					
4.68	4.68	636.72	BB	0.251	1	0.189	P-XYLENE
8.11	8.11	3652.62 +	BB	0.419	2	ISTD 1	PROPYLBENZEN

MULTIPLIER = 1
 ISTD 1 AMT = 1

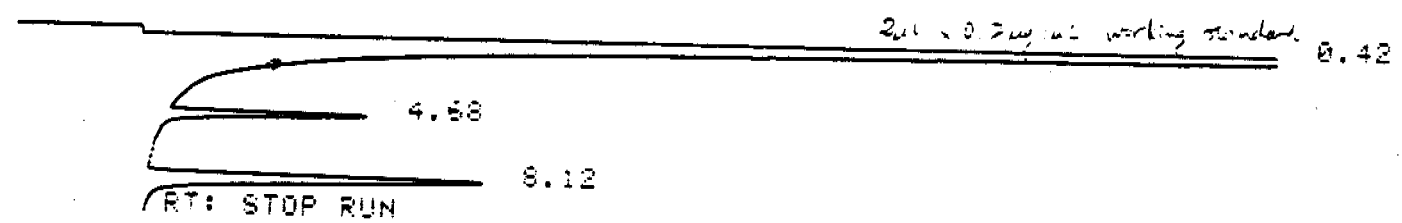
CALIB 2

CAL	RT	NAME	AMT
1	4.677	P-XYLENE	: .2
2	8.109	PROPYLBENZEN	: 1.0

EDIT AUTO SEQ 6, 3

EDIT AUTO SEQ 7, 3

START AUTO SEQ



HP 5880A SAMPLER INJECTION @ 15:27 APR 17, 1986
 SAMPLE # : ID CODE :

3
 PROJ. 2399-110 DAY 14 STAB AT RT% 5 DEG
 ISTD

RT	EXP RT	AREA	TYPE	WIDTH	CAL	AMOUNT	NAME
0.00		BASELINE @ START RUN = 8.13					
0.00		THRESHOLD @ START RUN = 4					
0.00		PEAK WIDTH @ START RUN = 0.08					
4.68	4.68	1294.75	BB	0.250	1	0.400	P-XYLENE
8.12	8.12	3573.90 +	BB	0.413	2	ISTD 1	PROPYLBENZEN

MULTIPLIER = 1
 ISTD 1 AMT = 1

CALIB 3

CAL	RT	NAME	AMT
1	4.683	P-XYLENE	: .4
2	8.100	PROPYLBENZEN	: 1.0

MULTIPLIER = 1
ISTD 1 AMT = 1

- 470 -

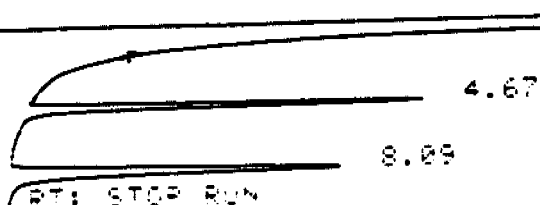
FIG 1. TYPICAL CHROMATOGRAMS, STANDARDS

START AUTO SEQ

DELETE CALIB
DELETE ALL (1=YES)? 1

RUN TIME 10 STOP

2.1.0 - 10' ml working standard 0.41



END 5880A SAMPLER INJECTION @ 15:00 APR 17, 1986

SAMPLE # : ID CODE :

METHOD ABORTED
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00						
0.00						
0.00						
0.41	991300.00	BV	0.07	211669.00	7.92	99.317
4.67	2603.03	BB	0.251	162.67	19.03	0.290
8.09	3528.91	BB	0.410	134.61	12.30	0.393

TOTAL AREA = 997432.00
MULTIPLIER = 1

CALIB 1
CALIB AREA OR HEIGHT (1=HEIGHT)? 0

CA	RT	AMT	REF	NAME
1	0.413	:	:	: P-XYLENE
1	4.666	: 1.0	:	: PROPYLBENZEN
2	8.091	: 1.0	: +ISTD	

0 MULTIPLIER = 1 :
-1 REF WINDOW = 5% :
-2 NON-REF WINDOW = 5% :
-3 UNCAL REF = 0 :
-4 LEADING
PRIN. 2099-110 DA 14 STAB AT RT6 5 DEG
:
-5 SAMPLE AMT = 0 :
-6 ISTD 1 AMT = 1 :

ISTD

EDIT AUTO SEQ 6. 2

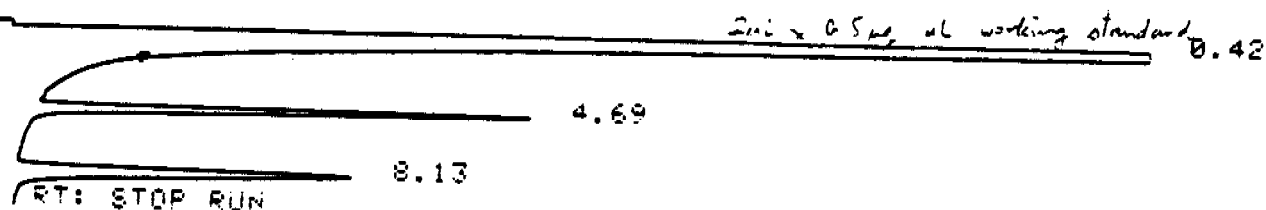
EDIT AUTO SEQ 61
EDIT AUTO SEQ 7. 2

EDIT AUTO SEQ

EDIT AUTO SEQ 7, 5

FIG1. TYPICAL CHROMATOGRAMS, STANDARDS

START AUTO SEQ



[AP] 5880A SAMPLER INJECTION @ 15:39 APR 17, 1986

SAMPLE # : ID CODE :

5

PROJ. 2399-110 DAY 14 STAB AT RT& 5 DEG

ISTD

RT	EXP RT	AREA	TYPE	WIDTH	CAL	AMOUNT	NAME
0.00							
0.00							
0.00							
4.69	4.69	3258.51	BB	0.252	1	0.984	P-XYLENE
8.13	8.13	3593.04 +	BB	0.413	2	ISTD 1	PROPYLBENZEN

BASELINE @ START RUN = 8.33

THRESHOLD @ START RUN = 4

PEAK WIDTH @ START RUN = 0.08

MULTIPLIER = 1
ISTD 1 AMT = 1

CALIB 4

CAL	RT	NAME	AMT
1	4.692	P-XYLENE	: 1.0
2	8.135	PROPYLBENZEN	: 1.0

LIST CALIB

CALIB TABLE:

CAL	RT	LEVEL	AMT	AMT/AREA	REF	NAME
1	4.666	1	8.00000E-01	3.07334E-04		
		2	2.00000E-01	3.14111E-04		P-XYLENE
		3	4.00000E-01	3.08941E-04		
		4	1.00000E+00	3.06889E-04		
2	8.091	1	1.00000E+00	2.83373E-04	+ ISTD 1	PROPYLBENZEN
		2	1.00000E+00	2.73776E-04		
		3	1.00000E+00	2.79808E-04		
		4	1.00000E+00	2.78316E-04		

CALIB PARAMS:

0 MULTIPLIER = 1
-1 REF WINDOW = 5%
-2 NON-REF WINDOW = 5%
-3 UNCAL RF = 0
-4 HEADING =

PROJ. 2399-110 DAY 14 STAB AT RT& 5 DEG

-5 SAMPLE AMT = 0

-6 ISTD 1 AMT = 1

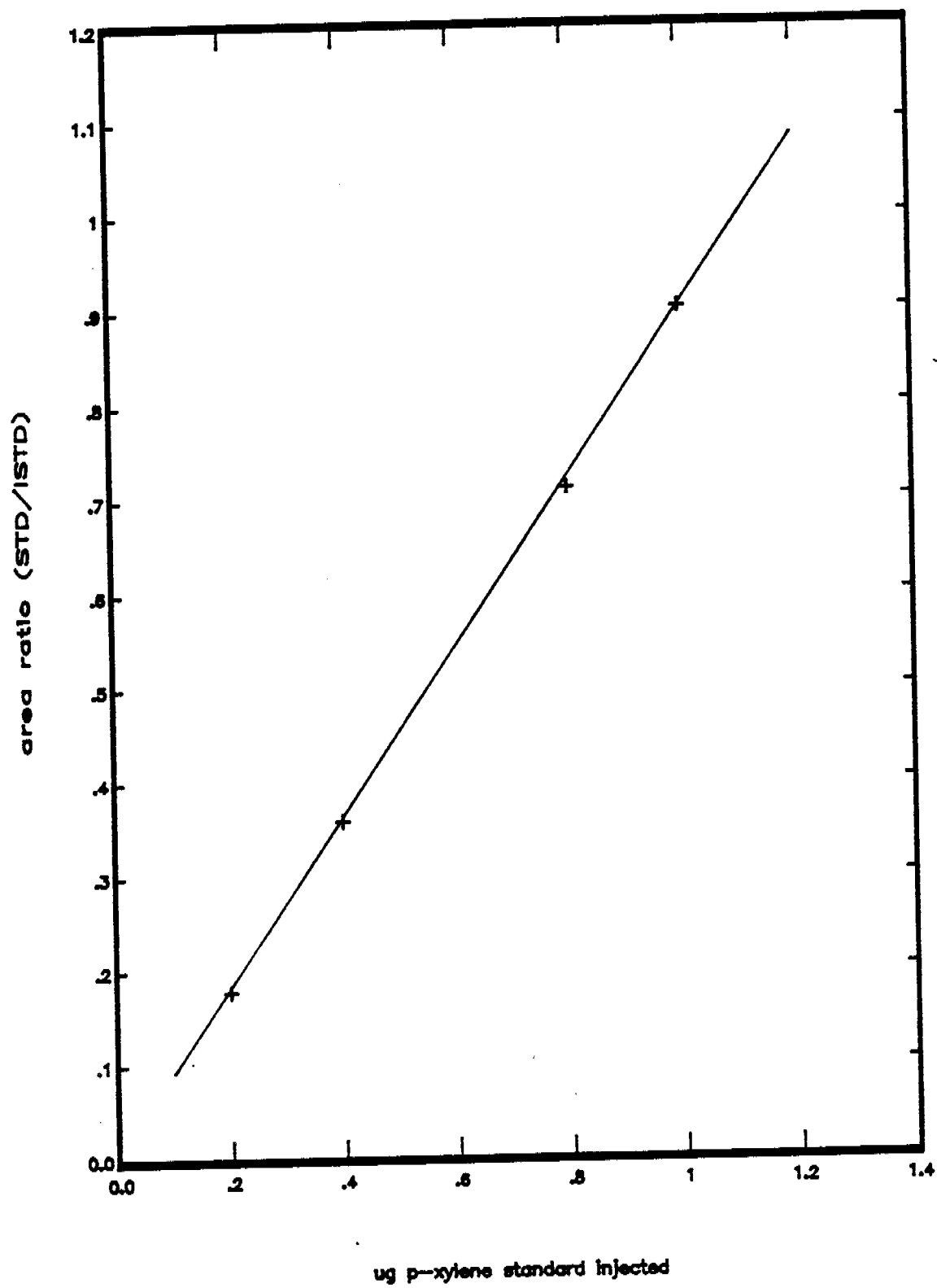
AVAILABLE MEMORY (BYTES): 24384

EDIT AUTO SEQ 6, 6

EDIT AUTO SEQ 7, 14

FIGURE 2 - STANDARD CURVE

p-xylene



4.70
8.15
RT: STOP RUN

【OP】 5880A SAMPLER INJECTION @ 15:54 APR 17, 1986

SAMPLE # : ID CODE :

6

PROJ. 2399-110 DAY 14 STAB AT RT& 5 DEG
ISTD

RT	EXP RT	AREA	TYPE	WIDTH	CAL	AMOUNT	NAME
0.00							
0.00							
0.00							
4.70	4.70	2578.74	BB	0.252	1	0.778	P-XYLENE
8.15	8.15	3596.63 +	BB	0.414	2	ISTD 1	PROPYLBENZEN

MULTIPLIER = 1
ISTD 1 AMT = 1

24 X 30-0279-10A RT

0.42

4.70
8.15
RT: STOP RUN

【OP】 5880A SAMPLER INJECTION @ 16:06 APR 17, 1986

SAMPLE # : ID CODE :

7

PROJ. 2399-110 DAY 14 STAB AT RT& 5 DEG
ISTD

RT	EXP RT	AREA	TYPE	WIDTH	CAL	AMOUNT	NAME
0.00							
0.00							
0.00							
4.70	4.70	2573.58	BB	0.252	1	0.774	P-XYLENE
8.15	8.15	3605.99 +	BB	0.414	2	ISTD 1	PROPYLBENZEN

MULTIPLIER = 1
ISTD 1 AMT = 1

24 X 30-0279-10A RT

0.42

4.70
8.16
RT: STOP RUN

【OP】 5880A SAMPLER INJECTION @ 16:18 APR 17, 1986

SAMPLE # : ID CODE :

8

PROJ. 2399-110 DAY 14 STAB AT RT& 5 DEG
ISTD

7. Analysis of Corn Oil for Peroxide

a. Any batch of corn oil used in the Bioassay Program will be analyzed for peroxides before it is first used and at monthly intervals thereafter, while it is in use. Corn oil must be purchased in batches no smaller than 2 gallons (7 Kg) per chemical for which it is the dose vehicle, unless substantially less than this quantity is being used monthly. All corn oil must be stored at 5° C or lower.

b. The following is a standard analytical procedure which can be used for these analyses. The method employed is the Official Method Cd. 8-53 of the A.O.C.S. (1972).^{1/} It determines all substances, in terms of milliequivalents (meq) of peroxide per 1,000 grams of sample, which oxidize aqueous iodide under the conditions of the test. These are

^{1/} Official and Tentative Methods of the American Oil Chemists' Society, 3rd Ed. Revised; V.C. Mehlenbacher, T.H. Hopper, E.M. Saltee, and W.E. Link, Eds., American Oil Chemists' Society, Champaign, Illinois (1972).

This is a contractually specified method.

Notes. 1) Boil and cool all H₂O.

2) Prepare 0.005 N Thiosulfate by dilution of a commercial standardized thiosulfate titrant of greater normality

Jerry H. Fitzgerald

8/26/51

generally assumed to be peroxides or other similar products of fat oxidation. The method is highly empirical, and any variation in procedure may affect the results.

c. A 5.0 gram sample of the corn oil to be analyzed is quantitatively transferred into a 250 ml titration flask and 30 ml of glacial acetic acid:chloroform (60:40 v/v) is added. The mixture is stirred until the corn oil has completely dissolved. One-half milliliter of a saturated aqueous potassium iodide solution is added. The test solution is stirred thoroughly and allowed to stand for exactly 1 minute, after which 30 ml of distilled water is added. The iodine liberated by the peroxides in this solution is titrated potentiometrically with standard 0.005 N sodium thiosulfate solution, stirring vigorously to ensure thorough mixing. An automatic titrator with platinum disk working electrode and silver - silver chloride reference electrode is convenient. Titrations should be run in triplicate. A blank titration of reagents should be run on the day the oil sample is analyzed; the blank should not titrate more than 1.0 ml of the 0.005 N sodium thiosulfate standard solution. Peroxide number, expressed in milliequivalents of peroxide per kilogram of oil (meq/kg), is calculated as follows:

$$\text{Peroxide Number} = \frac{(V - B) \times N \times 1,000}{W}$$

V = volume (in ml) of thiosulfate solution required for titration of oil sample

B = volume (in ml) of thiosulfate solution required for titration of reagent blank

N = normality of sodium thiosulfate solution

W = Weight of oil sample in grams

d. Results should be reported as shown in Figure 13 to this Attachment A. In this report, the method above can be cited by reference to this document, but the instrument used for the titration must be specified. When reporting follow-up analyses, the dates and results of all previous analyses of the batch should be included for comparison. Conclusions and actions taken as a result must be noted, and the report must be signed and dated by the responsible chemist. These reports should accompany the first Monthly Progress Report after the analysis.

e. Corn oil with a peroxide number equal to or less greater than 10 meq/kg will be considered rancid for purposes of this program and must be replaced immediately.

Footnotes:

(41A) Changed 10/26/79 by Modification 70

Dist. G. Wolfe, I. Foxx, M. Rodwin, Project File

ANALYSIS FOR PEROXIDES IN CORN OIL

Bioassay Lab: Hazleton Biotechnologies Company

Type (brand) of corn oil: Duke's Pure Corn Oil

Source: Mazo Lerch Co.

Lot or batch number (if any): Lot No. 5K21

Additives (if known): Not indicated

Date procured: 1/14/86

Storage temperature: 4°C - Rockville, walk-in refrigerator

Used for: Gavage vehicle

Analytical Method: MRI modification of AOC/AOAC method

Digital MV meter used with a platinum combination electrode (platinum/AG/AgCl), Fisher Cat. No. 13-639-82.

<u>Date of Analysis</u>	<u>Peroxide Number (from each individual titration, meq/kg)</u>	<u>Average Peroxide Number (meq/kg)</u>
4/21/86	1.11, 1.07, 1.04	1.07 ± 0.035 S.D.
<u>Previous Analyses</u>		
1/31/86	0.611, 0.616, 0.611	0.613 ± 0.003 S.D.
3/03/86	0.893, 0.888, 0.892	0.891 ± 0.003 S.D.

Conclusions: Peroxide number is well below the limit of 10 meq/kg.

Signed Lee Hahnig
Date 5-16-86

Approved Susan A. Lewis

Dist. G. Wolfe, J. Fox, M. Rodwin, Project File

ANALYSIS FOR PEROXIDES IN CORN OIL

Bioassay Lab: Hazleton Biotechnologies Company

Type (brand) of corn oil: Schneck's Corn Oil

Source: Mazo Lerch Co.

Lot or batch number (if any): Lot No. 775

Additives (if known): Not indicated

Date procured: 5/15/86

Storage temperature: 4°C - Rockville, walk-in refrigerator

Used for: Gavage vehicle

Analytical method: MRI modification of AOC/AOAC method

Digital MV meter used with a platinum combination electrode (platinum/AG/AgCl), Fisher Cat. No. 13-639-82.

<u>Date of Analysis</u>	<u>Peroxide Number (from each individual titration, meq/kg)</u>	<u>Average Peroxide Number (meq/kg)</u>
5/19/86	1.14, 1.14, 1.13	1.14 ± 0.006 S.D.

Previous Analyses

Conclusions: Peroxide number is well below the limit of 10 meq/kg.

Signed
Date

Lee Hahn
5-20-86

Approved

James E. Dorschner

Dist. J. Wolfe, J. Foxx, M. Rodwin, Project File

ANALYSIS FOR PEROXIDES IN CORN OIL

Bioassay Lab: Hazleton Biotechnologies Company

Type (brand) of corn oil: Schneck's Corn Oil

Source: Mazo Lerch Co.

Lot or batch number (if any): Lot No. 775

Additives (if known): Not indicated

Date procured: 6/20/86

Storage temperature: 4°C - Rockville, walk-in refrigerator

Used for: Gavage vehicle

Analytical method: MRI modification of AOC/AOAC method

Digital MV meter used with a platinum combination electrode (platinum/Ag/AgCl), Fisher Cat. No. 13-639-82.

<u>Date of Analysis</u>	<u>Peroxide Number (from each individual titration, meq/kg)</u>	<u>Average Peroxide Number (meq/kg)</u>
6/20/86	1.37, 1.37, 1.37	1.37 ± 0.00 S.D.
<u>Previous Analyses</u>		
5/19/86	1.14, 1.14, 1.13	1.14 ± 0.006 S.D.

Conclusions: Peroxide number is well below the limit of 10 meq/kg.

Signed
Date

Lee Hahung
6-23-86

Approved

James H. Donohue

ANALYSIS FOR PEROXIDES IN CORN OIL

Bioassay Lab: Hazleton Biotechnologies Company

Type (brand) of corn oil: Schneck's Corn Oil

Source: Mazo Lerch Co.

Lot or batch number (if any): Lot No. 775

Additives (if known): Not indicated

Date procured: 6/20/86

Storage temperature: 4°C - Rockville, walk-in refrigerator

Used for: Gavage vehicle

Analytical method: MRI modification of AOC/AOAC method

Digital MV meter used with a platinum combination electrode (platinum/AG/AgCl), Fisher Cat. No. 13-639-82

<u>Date of Analysis</u>	<u>Peroxide Number (from each individual titration meq/kg)</u>	<u>Average Peroxide Number (meq/kg)</u>
7/17/86	1.63, 1.64, 1.63	1.63 ± 0.006 S.D.
<u>Previous Analyses</u>		
5/19/86	1.14, 1.14, 1.13	1.14 ± 0.006 S.D.
6/20/86	1.37, 1.37, 1.37	1.37 ± 0.00 S.D.

Conclusions: Peroxide number is well below the limit of 10 meq/kg.

Signed
Date

Lee Hobbing
7-18-86

Approved

Susan A. Harris



HAZLETON

LABORATORIES AMERICA, INC.

1330 - B PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

ATTACHMENT B

Chemical Characterization of the Test Material:

1. Report of Analysis, Hazleton Laboratories America, Madison, Wisconsin.
 - a - Moisture, Karl Fischer method
 - b - GC purity
 - c - IR spectra
 - d - GCMS
 - e - NMR
2. Elemental analysis, Micro-Tech Laboratories, Inc., Skokie, Illinois.
3. Report of Analysis, Hazleton Laboratories America, Madison, Wisconsin.
 - a - Final GC purity

**HAZLETON**

LABORATORIES AMERICA, INC.

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Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

LEE HOHING
HAZLETON BIOTECHNOLOGIES CORPORATION
9200 LEESBURG TURNPIKE
VIENNA, VA 22180

SAMPLE NUMBER: 6030270

DATE ENTERED: 03/13/86

REPORT PRINTED: 04/30/86

P-XYLENE (RO-0219 86)

PURCHASE ORDER NUMBER: 002107

ASSAY
MOISTURE, KARL FISCHER METHOD

<u>ANALYSIS</u>	<u>UNITS</u>
.160	%

G.C. PURITY

PURE BY G.C. ANALYSIS

99.8	%
------	---

METHOD REFERENCE

HAZLETON LABORATORY WORKSHEET 05XX 000166-00.

IR SPECTRA

EXHIBITS CHARACTERISTIC PEAKS FOR THIS COMPOUND

METHOD REFERENCE

ALDRICH REFERENCE BOOK OF IR SPECTRA.

GCMS

REPORT TO BE GENERATED MANUALLY

NMR

REPORT TO BE GENERATED MANUALLY

CARBON
HYDROGEN
OXYGEN

88.05	%
9.36	%
0.26	%

METHOD REFERENCE

ANALYSIS PERFORMED BY MICRO-TECH LABORATORIES, INC., SKOKIE, IL



HAZLETON

- 482 -
LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

SAMPLE NUMBER: 60302709

PAGE 2

P-XYLENE (RO-0219 86)

METHOD REFERENCES

MOISTURE, KARL FISCHER METHOD
UNITED STATES PHARMACOPEIA, VOLUME XX, PAGE 988 (1980).

METHOD LISTED ABOVE WITH RESULTS

GCMS
METHOD PER ANALYSIS

Operator <u>Henry J. Blum</u>	Date <u>7-20-76</u>
Column <u>6'</u>	Detector <u>FID</u>
Length <u>2 am</u>	Range <u>2-8</u>
Phase <u>50/50/50/50/50</u>	Atten. <u>2-3</u>
Flow Rates ml/min.	
Hydrogen <u>30</u>	Air <u>330</u>
Carrier Gas <u>Helium</u>	Reagents <u>NA</u>
Rotameter <u>40</u>	Temp. <u>NA</u>
Inlet Press <u>290</u>	Out. <u>100</u>
Rate <u>40</u>	Flow <u>100</u>
CHART SPEED <u>low</u>	Rate <u>35</u>
SAMPLE <u>P-Xylene</u>	Subst. <u>5 mg/2 ml</u>
Size <u>1 ml</u>	Notes <u>Heads, dilutions</u>

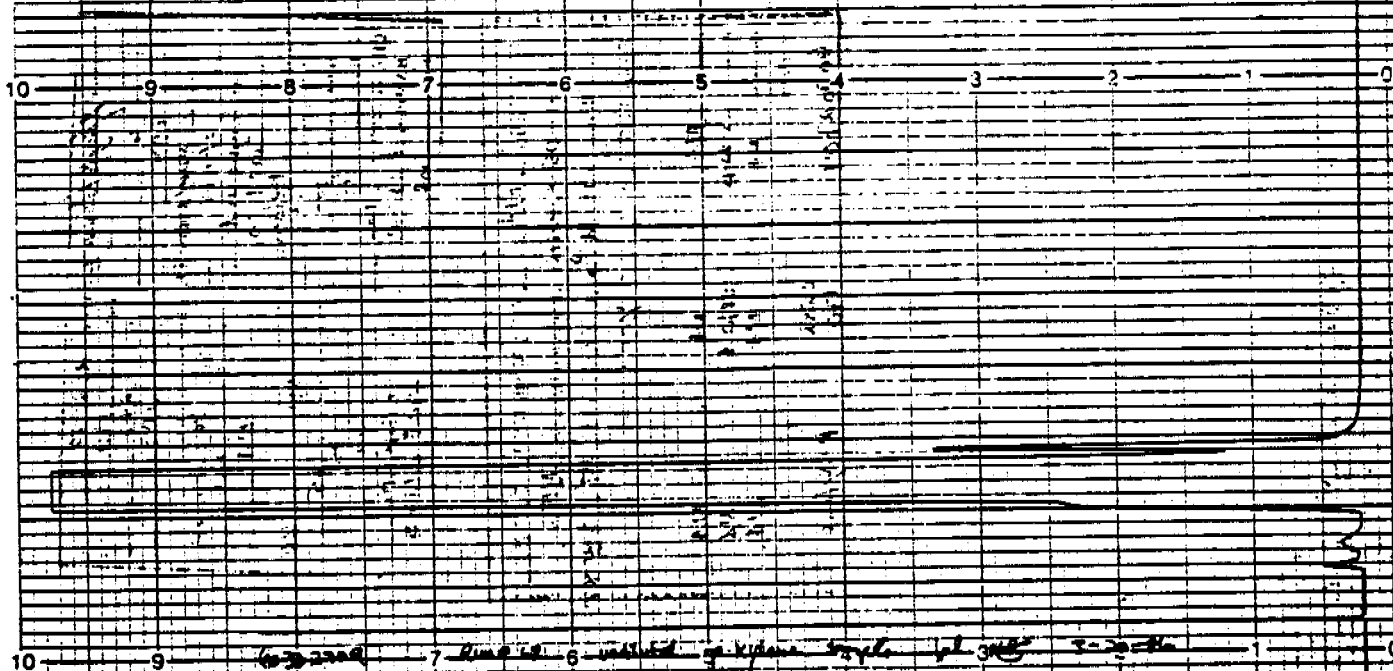
Std. No. <u>NA</u>	Assay Method <u>OSXX</u>
Assigned to <u>OSXX 6500</u>	Entered by <u>NA</u>
Analyzed by <u>NA</u>	Calculated by <u>NA</u>
Analysis technique <u>GC/MS</u>	<u>3-21-86</u>
Pump No. <u>NA</u>	Int. No. <u>NA</u>
Recorder No. <u>3-90-13</u>	Obs. No. <u>5870 A</u>
Channel No. <u>NA</u>	Int. No. <u>NA</u>
Sample No. <u>60302709</u>	Int. No. <u>NA</u>
	OSXX <u>170</u>
	<u>P-Xylene</u>

60302109

Other 25% of animal exfoliate sample ~~was~~ 3-4% less to

603-2709

July 8 2023 2023 in Lake Station Road 69 WIS 3-20-20



44-38861-100

Run # 6 - collected at Kilauea Ige. Vol 305 3-20-86

10 9 8 7 6 5 4 3 2

July 1st 1964 3:00 PM Run 13

10 9 8 7 6 5 4 3 2
July 1st 1964 3:00 PM Run 13

July 1st 1964 3:00 PM Run 13

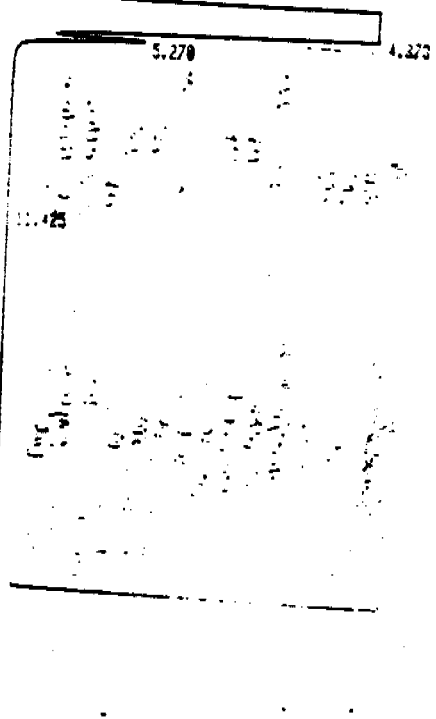
10 9 8 7 6 5 4 3 2
60-30009 3:00 PM Run 13

no injection

10 9 8 7 6 5 4 3 2
60-30009 3:00 PM Run 13

RUN # 68 MAR 20, 1986 13:01:35
START *locoson* *matrix* *matrix* 2.365

1.365
2.365
3.365



STOP

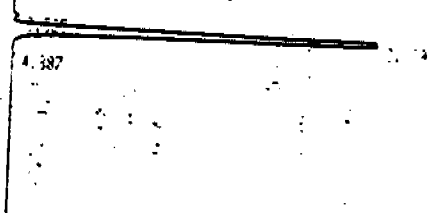
RUN# 68 MAR 20, 1986 13:01:35

RT	AREA	TYPE	WIDTH	AREA%
.365	1354199	PB	.026	.04731
1.914	263568	PV	.153	.00925
2.553	355583	VP	.404	.01247
4.873	2,845E+09	PV	.638	99.31002
5.270	3442014	VB	.180	.12077

TOTAL AREA=2.3502E+09
REL FACTOR=1.0000E+00

RUN # 69 MAR 20, 1986 13:32:59
START

0.077
1.371



STOP

RUN# 69 MAR 20, 1986 13:32:59

RT	AREA	TYPE	WIDTH	AREA%
.319	532986400	PH	.033	34.36324
0.525	89624	PP	.144	.01596
1.371	13757175	PS	.157	0.12913

TOTAL AREA=3.5124E+09
REL FACTOR=1.0000E+00

STOP

RUN# 69 MAR 20, 1986 13:32:59

AREAZ

RT	AREA	TYPE	WIDTH	AREAZ
.318	532986488	SHB	.833	94.36394
3.525	89634	PP	.144	.81596
3.988	28767888	PB	.167	5.12813

TOTAL AREA=5.6184E+08
MUL FACTOR=1.0000E+00

* RUN # 70 MAR 20, 1986 13:48:43
STOP *part 1*

3.168

3.271

STOP

RUN# 70 MAR 20, 1986 13:48:43

AREAZ

RT	AREA	TYPE	WIDTH	AREAZ
.349	247811288	SHB	.822	99.33813
3.971	1528788	PB	.166	.61188

TOTAL AREA=2.4853E+08
MUL FACTOR=1.0000E+00

* RUN # 71 MAR 20, 1986 13:58:47
START *part 2*

3.231

3.675

3.015

3.528

4.385

0.167

STOP

RUN# 71 MAR 20, 1986 13:58:47

AREAZ

RT	AREA	TYPE	WIDTH	AREAZ
.315	541293128	SHB	.833	97.21798
3.967	15375488	PB	.166	2.76284

TOTAL AREA=5.5867E+08
MUL FACTOR=1.0000E+00

* RUN # 72 MAR 20, 1986 14:05:59
START *part 3*

3.571

3.015

4.322

0.168

STOP

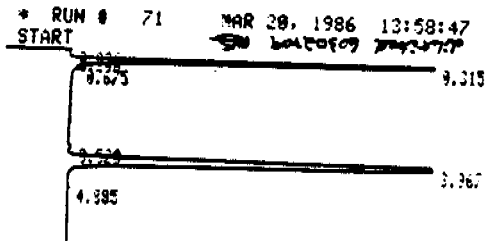
RUN# 72 MAR 20, 1986 14:05:59

AREAZ

- 489 -

RT	AREA TYPE	WIDTH	AREA2
.349	247911200 SHB	.022	99.00313
3.971	1520700 PB	.166	.61188

TOTAL AREA=2.4853E+08
MUL FACTOR=1.0000E+00

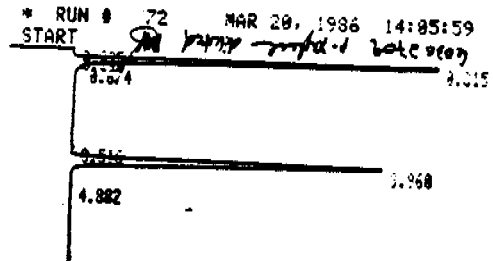


STOP

RUN# 71 MAR 20, 1986 13:58:47

RT	AREA TYPE	WIDTH	AREA2
.315	541293120 SHB	.033	97.23798
3.967	15375400 PB	.166	2.76204

TOTAL AREA=5.5667E+08
MUL FACTOR=1.0000E+00

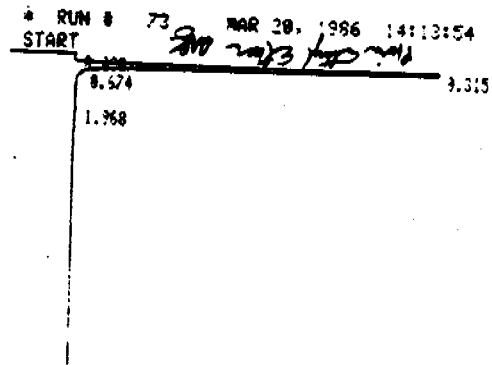


STOP

RUN# 72 MAR 20, 1986 14:05:59

RT	AREA TYPE	WIDTH	AREA2
.315	525202900 SHB	.032	99.53520
3.960	7007640 PB	.166	1.46482

TOTAL AREA=5.3301E+08
MUL FACTOR=1.0000E+00



STOP

RUN# 73 MAR 20, 1986 14:13:54

RT	AREA TYPE	WIDTH	AREA2
.315	536036720 SHB	.033	100.00000

TOTAL AREA=5.0639E+08
MUL FACTOR=1.0000E+00

60302709

P-XYLENE

RO-0219-86

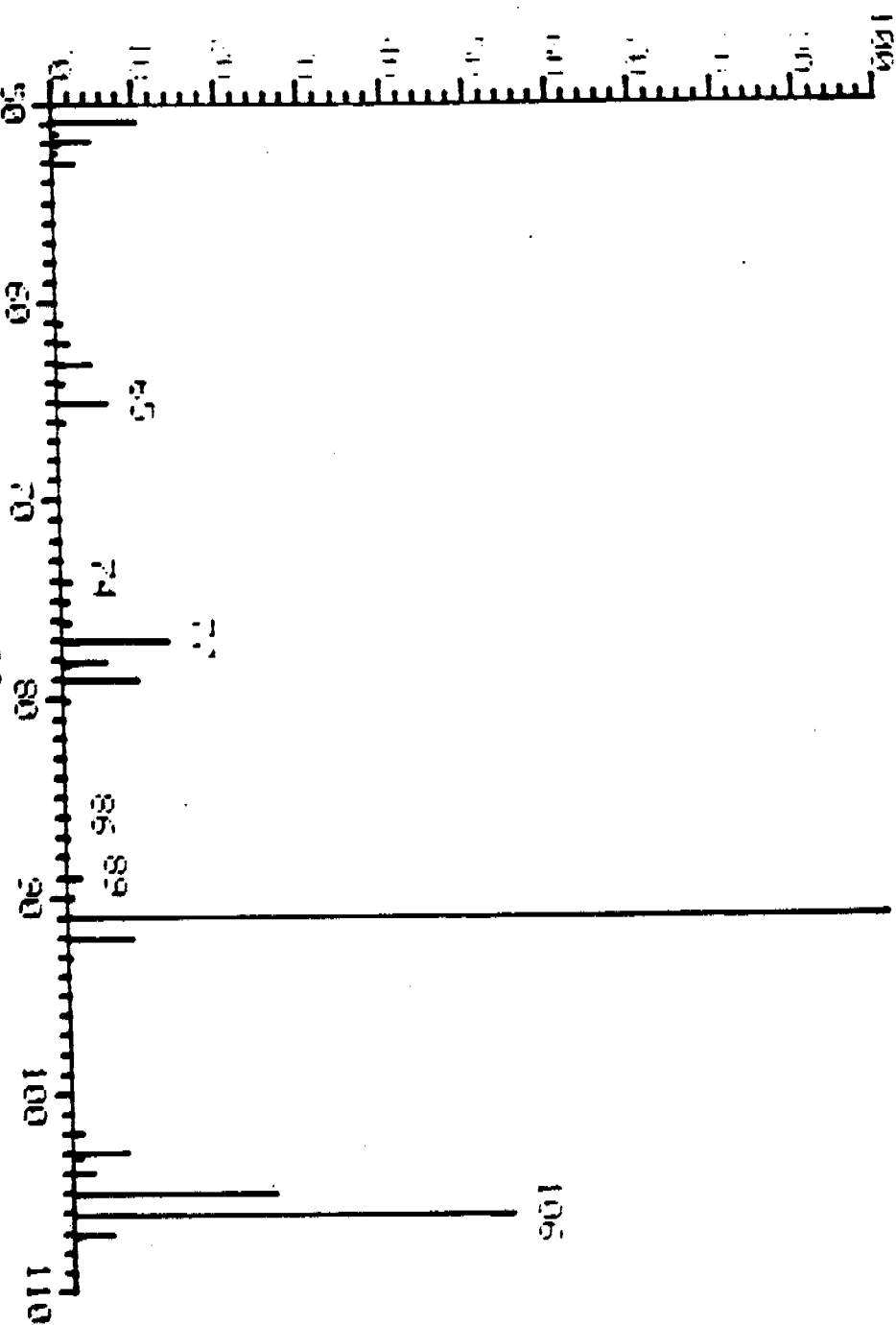
ANALYSIS NAME: HZLE.DAT;6

SPEC# 29

NORM: B SCALE: 68684

Plot DATE APR 2 86 13:10:01 103.6

Analyzed 3/21/86
Curtin



X: SLIST OF HH00:[007,300]HZLE.DAT;6 60302709 p-xylene RO-0219-86
MAR 21 86 16:35:30 VERSION V03.6 PAGE: 1

SPECTRUM NUMBER: 29 NUMBER OF PEAKS: 38

NORM. FACTORS: 1. 686.84

Analyzed 3/21/86
Cm 7 (m)

PEAK#	MASS	A	B
1	50.000	2576.	3.75
2	50.938	7048.	10.26
4	51.938	3200.	4.66
7	53.063	1776.	2.59
9	62.063	972.	1.42
10	63.125	2812.	4.09
13	65.125	4264.	6.21
16	74.125	744.	1.08
19	77.063	8936.	13.01
20	78.125	3720.	5.42
22	79.063	6396.	9.31
26	89.062	1140.	1.66
28	91.000	68684.	100.00
29	92.063	5520.	8.04
31	102.000	828.	1.21
32	103.000	4732.	6.89
33	103.188	732.	1.07
34	104.000	1704.	2.48
35	105.063	17048.	24.82
36	106.125	36808.	53.59
37	107.125	3404.	4.96

***** SLIST PROCESSING COMPLETE *****



THE UNIVERSITY OF WISCONSIN-MILWAUKEE/P.O. Box 413, Milwaukee, Wisconsin 53201

COLLEGE OF LETTERS AND SCIENCE
DEPARTMENT OF CHEMISTRY

PHONE: (414) 963-4411

To: Joe Polywacz
Hazleton Laboratories

From: James Otvos, Asst. Professor *[Signature]*

Re: NMR analysis of LIMS #'s 60301753-60301754 and
60302709-60302711 *HLA-VA*

Date: April 21, 1986

Enclosed are ^1H NMR spectra of p-xylene(60302709), m-xylene(60302710), and o-xylene(60301754) in deuteriochloroform solvent which positively confirm their identities. The o-xylene sample was labeled "o-xylol", but is in fact xylene. An unexpected peak at 2.21 ppm was found in the p-xylene sample which was attributed to a solvent contaminant (probably H_2O) since a ^{13}C NMR spectrum of the same sample failed to exhibit any extra resonances. The three xylene samples are at least 98% pure as judged by the intensities of several small resonances of unknown origin in the spectra.

^{13}C spectra were taken of the remaining two samples, strychnine (60301753) and brucine(60302711), because they are much more diagnostic of the structures of these compounds compared to ^1H spectra. As the enclosed spectra indicate, the samples are pure. The number of resonances observed in each spectrum and their chemical shifts confirm the identities of the two compounds.

RECEIVED

APR 23 1986

HLA Madison

SKOKIE, ILLINOIS 60076

To: Mr. L. Evarts
Hazleton Laboratories America, Inc.
3301 Kinsman Boulevard
P.O. Box 7545
Madison, Wisconsin 53704

Very truly yours,

June B. Gast



HAZLETON

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

LEE HOHING
HAZLETON BIOTECHNOLOGIES CORPORATION
9200 LEESBURG TURNPIKE
VIENNA, VA 22180

SAMPLE NUMBER: 60706248

DATE ENTERED: 07/30/86

REPORT PRINTED: 10/29/86

P-XYLENE: RO-0216-86 REFERENCE CHEMICAL

PURCHASE ORDER NUMBER: 0A12550

SEE ATTACHED CHROMATOGRAMS

METHOD REFERENCES

METHOD LISTED ABOVE WITH RESULTS



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Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (808) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

LEE HOHING
HAZLETON BIOTECHNOLOGIES CORPORATION
9200 LEESBURG TURNPIKE
VIENNA, VA 22180

SAMPLE NUMBER: 6070624

DATE ENTERED: 07/30/8

REPORT PRINTED: 10/29/8

P-XYLENE: RO-0931-86 BULK CHEMICAL

PURCHASE ORDER NUMBER: 0A12550

SEE ATTACHED CHROMATOGRAMS

METHOD REFERENCES

METHOD LISTED ABOVE WITH RESULTS

Study No(s)	NA		Assay Information(s)	OSKX
Attached to			Entered by	NA
Injected (Amount)	1A		1A 0-28-K	
Analysis technique				
Pump No.	NA	NA	NA	
Recorder No.	NA	08000052	NA	
Channel No.	NA	NA	NA	
Sample No.				

Operator	J. H. Abrecht	Date	10-28-66
Column	6'	Detector	FID
Length	2 mm	Range	100
Phase	SP1200/Bentone 3+	Atten.	4
Flow Rates, ml/min.			
Hydrogen	50	Air	200
Carrier Gas	Helium	Solvents	-
Boiler	-		
Flowmeter	22	Temperature, °C	
Inlet Press		100	Inj. 100
Rate	40 ml/min	Column Initial	25
CHART SPEED	low 0.5	Final	75
SAMPLE	M-XYLENE, P-XYLENE	Rate	NA
Size	1 µl	2-TMVL 2-TMVL	
		Pikachu	

60706238

60706239

60706242

60706243

60706243 Run 04 1st of 0.01 ml p-xylene in 1st empty vial for 10-24-86

60706242 Run 03 1st of 0.01 ml p-xylene in 1st empty vial for 10-24-86



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HLA 2399-110

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APPENDIX 10

Study Protocol and Amendments



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ROCKVILLE MARYLAND 20850

PROJECT NO. 2399-110 DATE ISSUED April 7, 1986

PROPOSAL NO. 5-580 STUDY TITLE: Subchronic Toxicity Study in Rats

TEST MATERIAL (s): Safety, storage, and descriptive information is attached.

A. Identification P-Xylol (P-Xylene)
B. Lot No. (s) 235855 385
C. Receipt Date March 6, 1986
D. LH Number (s) 10,032A

STUDY LOCATION: Rockville

PROPOSED INITIATION DATE: April 17, 1986
PROPOSED COMPLETION OF
IN-LIFE PHASE DATE: July 17, 1986

DISTRIBUTION: ORIGINAL SIGNED PROTOCOL TO PSO

FIXED DISTRIBUTION: (No. Copies)*

PERFORMING DEPARTMENTS (4 copies each)

Health Services (1) Quality Assurance (1)
Compound Prep (Tox) (1) Contracts (1)
Scientific Res. (Tox) (2) (1) Client Services (1)
Lab Animal Medicine (1) Sponsor (1)

Toxicology (2) Analytical Chemistry (1)
Pathology (4)

* Unless otherwise directed.

Protocol is Attached.

Date and Means of Sponsor Authorization:

Signed protocols to be forwarded by sponsor.

This protocol issued to permit scheduling of the study by the laboratory.

STUDY DIRECTOR: Gary W. Wolfe, Ph.D., D.A.B.T.

DATE: 4/9/86



PROTOCOL

Project No. 2399-110

1. Study Subchronic Toxicity Study in Rats
2. Purpose To evaluate the subchronic toxicity of a test material when administered daily via oral gavage to rats for 90 days.
3. Study Location Hazleton Laboratories America, Inc.
1330-B Piccard Drive
Rockville, Maryland 20850
4. Sponsor and Address Dynamac Corporation
11140 Rockville Pike
Rockville, Maryland 20852
5. HLA Study Director Gary W. Wolfe, Ph.D., D.A.B.T.
6. HLA Study Coordinator Marcia P. Rodwin, B.A.
7. Regulatory Compliance This study is subject to applicable regulations of the Environmental Protection Agency and will be conducted per EPA Pesticide Assessment Guidelines, Subdivision F, Section 158.82-1, Toxic Substances Control Act (TSCA) Testing Guidelines for Ninety Day Subchronic Toxicity Studies, 40 CFR 798.2650, and in accordance with the Good Laboratory Practice Standards, 40 CFR Part 160.
8. Quality Assurance The protocol, in-life phase, interim report and the final report will be audited by Quality Assurance in accordance with standard operating procedures at Hazleton Laboratories.
9. Proposed Study Timetable
Initiation: April 17, 1986
Terminal Sacrifice: July 17, 1986
Final Report: September 12, 1986



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Project No. 2399-110

10. Test Material

A. Identification

p-Xylene (CAS 106-42-3)

B. Purity

99%

C. Characteristics

Purity and identity will be determined prior to study initiation, and purity only at termination. (If identity has been established for a 14-day study then only purity needs to be determined prior to start of 90-day study.)

D. Reserve Samples

Reserve samples (4 x 10 g) of the test and control articles will be taken at initiation and retained frozen. These archived samples of the test article will serve as reference standards for subsequent purity analyses. These samples, as well as any remaining test material, will be discarded upon acceptance of the study results for regulatory purposes (May 8, 1987).

11. Experimental Design

A. Animals

(1) Species

Rat

(2) Strain/Source

Sprague-Dawley/Charles River

(3) Age at Initiation

Preferably before 6 weeks of age, but not more than 8 weeks of age.

(4) Number/Sex

80/sex

(5) Identification

Individual eartags

(6) Husbandry

(a) Housing

Individual

- (b) Food Purina Certified Rodent Chow[®] 5002, ad libitum. Feed is analyzed by the manufacturer for concentrations of specified heavy metals, aflatoxin, chlorinated hydrocarbons, organophosphates, and specified nutrients. (See Attachment #1 for details).
- (c) Water Acidified water, ad libitum. Water is analyzed twice per year for contaminants as listed in the EPA drinking water standards.
- (d) Contaminants The study director and/or the sponsor have considered possible interfering substances potentially present in animal feed and water, including the test material itself or possible structurally related materials as well as the items listed in (b) and (c) above. None of these contaminants are reasonably expected to be present in animal feed or water at levels sufficient to interfere with this study.
- (e) Environment Every attempt will be made to maintain temperatures at 69 - 78°F with a relative humidity of 50 ± 20%. A 12-hour light/12-hour dark cycle will be maintained. Temperature and humidity will be recorded twice daily.
- (f) Quarantine Approximately two weeks. Animals selected for study will have been determined to be acceptable for admission to the study.
- (7) Randomization Using computer-generated random numbers with assignment to groups. At the time of randomization, the weight variation of the animals of each sex used should not exceed ±2 S.D. of the mean weight, and the mean body weights for each group of each sex will not be statistically different.



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Project No. 2399-110

(8) Justification

Sprague-Dawley rats historically have been used in safety evaluation studies and are requested by EPA.

B. Group Designation and Dosage Levels

Group No.	No. of Animals		Dosage Levels mg/kg/day
	Male	Female	
1 (Control)	20	20	0
2 (Low)	20	20	100
3 (Mid)	20	20	200
4 (High)	20	20	800

C. Dosing Procedures

(1) Method of Administration

Oral gavage, 7 days per week for 13 weeks. Treatment will continue until the day before necropsy.

(2) Reason for Dosing Route

Potential human exposure is by the oral route.

(3) Preparation of Dosing Formulations

Fresh dosing formulations will be prepared based on stability study. Dosing formulations will be prepared using corn oil and adjusted to 100% compound activity. Dosing factor will be 2.5 ml/kg. Reserve samples from each mixed batch will be retained for possible analysis. These samples will be discarded upon acceptance of the final report.

(4) Analysis of Dosing Formulations

(a) Stability

Samples of the lowest level will be analyzed at Day 0 and after 7, 14, and 21 days under conditions of use and under refrigeration.

(b) Homogeneity

If the dosage formulation is a suspension, homogeneity of each formulation will be confirmed by analyzing the top, middle, and bottom of each formulation prior to study initiation. If the dosage formulation is a single phase, no homogeneity is required.



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(c) Routine Analyses

Each dosage formulation for weeks 1, 5, 9, and 13 will be analyzed for test material.

(5) Absorption

Though the purpose of this study is not to determine absorption of the test material, toxic or pathologic effects will serve as evidence of absorption.

D. Observation of Animals

(1) Clinical Observations

Twice daily - mortality and morbidity check.

Once daily - cageside observation for obvious indications of a toxic effect, will be recorded about one hour after completion of dosing. In addition, a cursory exam will be conducted while dosing.

Data for specific observations will be recorded on separate forms. Because these are cageside animal checks, the observations will not be as specific as and may not necessarily duplicate those observations recorded on body weight days when thorough physical examinations are conducted.

(2) Physical Examinations

At each weighing interval.

(3) Body Weights

Prior to treatment, at initiation and weekly thereafter.

(4) Food Consumption

Weekly

(5) Ophthalmoscopic
Examinations

Prior to treatment and during week 13 using indirect ophthalmoscopy on the last ten animals per sex per group.

E. Clinical Pathology

(1) Frequency

Prior to initiation and during weeks 4 and 13.



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Blood will be collected via orbital sinus with CO₂ anesthetization.

(2) Number of Animals

(a) Prior to initiation

5/sex randomly selected from animals acceptable for study but not used on study.

(b) During Weeks 4 and 13

10/sex/group (sampled per SOP)

(3) Tests

(a) Hematology

leukocyte count
erythrocyte count
hemoglobin
hematocrit
platelet count
differential leukocyte count
reticulocyte count

(b) Blood Chemistry

sodium
potassium
chloride
total protein
albumin
calcium
phosphorus
total bilirubin
urea nitrogen
creatinine
glucose
SGOT/AST
SGPT/ALT
globulin
alkaline phosphatase
cholesterol
albumin/globulin ratio
LDH



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F. Termination

(1) Unscheduled Sacrifices and Deaths

Necropsies, by trained personnel using procedures approved by board-certified pathologists, will be conducted on all moribund animals and on all animals that die.

(2) Terminal Kill

After 13 weeks of treatment, all surviving animals will be weighed, killed by CO₂ intoxication and subjected to a complete gross necropsy. Necropsies will be conducted by trained personnel under the direct supervision of a board-certified pathologist.

G. Postmortem Procedures

(1) Gross Necropsy

The necropsy will include examination of:

The external surface

All orifices

Cranial cavity

Carcass

External surface of the brain (at necropsy). Cut surfaces of the brain and spinal cord will be examined at the time of tissue trimming.

The thoracic, abdominal and pelvic cavities and their viscera

The tissues and organs of the neck region

Findings will be recorded.

(2) Organ Weights

For each terminally killed animal, the following organs will be weighed following careful dissection and trimming to remove fat and other contiguous tissue in a uniform manner:

liver

kidneys

spleen

adrenals

testes/ovaries

brain

heart



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Project No. 2399-110

(3) Tissue Preservation

The following tissues from each animal will be preserved in 10% neutral buffered formalin:

all gross lesions	kidneys	skin
brain with brainstem	adrenals	epididymis
(medulla/pons, cerebellar cortex, and cerebral cortex)	pancreas	prostate
pituitary	testes	seminal vesicles
thyroid with parathyroids	ovaries	
thymus	uterus	
lungs	spleen	
trachea	aorta	
heart	esophagus	
salivary glands (mandibular)	stomach (forestomach and glandular)	
liver	duodenum, jejunum, ileum	
sternum with bone marrow	colon, cecum, rectum	
mammary gland	urinary bladder	
thigh musculature	mesenteric lymph node	
eyes	sciatic nerve	
	femur including articular surface	
	cervical spinal cord	
	mid-thoracic spinal cord	
	lumbar spinal cord	
	exorbital lacrimal glands	

Electron microscopy will be conducted on livers from control, 200, and 800 mg/kg groups. Detailed methodology will be issued as an amendment to the protocol.

(4) Histopathology

All preserved tissues from all animals will be embedded in paraffin, sectioned, and stained with hematoxylin and eosin.

The following tissues will be examined microscopically:

- (1) All tissues from control and high-dose animals and from all animals not surviving to termination.
- (2) Gross lesions, lungs, liver, and kidneys from all remaining animals.
- (3) Target organs noted at the high-dose level from all animals.

12. Reports

Following termination of the study, a report which includes the following information (as appropriate) will be prepared and submitted:

- Experimental Design and Methods

- Results:

mortality
clinical observations
body weights and
food consumption
clinical pathology tests

ophthalmoscopic findings
organ weights and organ/body
weight ratios
gross pathology
histopathology

- Statistical Analyses:

Statistical methods will be those presented in Attachment #2.

- Statistical Evaluation:

survival rates
growth rates and/or absolute
body weights
total food consumption

clinical pathology values
organ weights and organ/
body weight ratios

- Tables:

mean food consumption values
cumulative survival rates and
mean body weights
summary of clinical
signs for each test group
to include: a list of each
finding and number of
animals affected

summary incidence of
ophthalmoscopic findings
mean clinical pathology values
mean organ weights and organ/
body weight ratios
summary incidence of gross
pathology findings
summary incidence of
histopathology findings



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- Appendices

week of death for each animal
individual body weights
individual food consumption
individual clinical signs
for each animal to include:
the week of observation of
each sign, a description
of each sign, and its
subsequent course
individual clinical
pathology values

individual ophthalmoscopic
findings
individual organ weights and
organ/body weight ratios
individual gross pathology
findings
individual histopathology
findings
analytical chemistry methods and
results

The final report, or a draft copy of such, will be reviewed by the sponsor within 1 month after receipt. Any revisions or comments will be submitted to Hazleton within this period.

13. Record Retention

All tissue specimens, blocks and slides, and copies of all raw data and the final report will be retained by Hazleton Laboratories. Tissue specimens will be discarded as per work assignment.



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LABORATORIES AMERICA, INC.
1330 - S PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

SIGNATURE PAGE

APPROVED BY:

Hazleton Laboratories America, Inc.:

Gary W. Wolfe
Study Director, Toxicology

Date: 3/14/86

Gary W. Wolfe
Program Manager, Toxicology

Date: 3/14/86

Sponsor:

Maureen A. Sigel

4-23-86



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ATTACHMENT #1

CONTAMINANT ANALYSIS FOR CERTIFIED RODENT CHOW® 5002 AND WATER

This information identifies the potential contaminants monitored for both laboratory feed and water. The Certified Rodent Chow data are provided by the manufacturer.

1. Certified Rodent Chow® 5002 certification profile:

<u>Heavy Metals</u>	<u>Maximum Concentration</u>
Arsenic	1.0 ppm
Cadmium	.5 ppm
Lead	1.5 ppm
Mercury	.2 ppm
<u>Aflatoxin</u>	10 ppb
<u>Chlorinated Hydrocarbons and PCB</u>	
Aldrin	.05 ppm
Dieldrin	.05 ppm
Endrin	.05 ppm
Heptachlor	.05 ppm
Heptachlor Epoxide	.05 ppm
Lindane	.05 ppm
Chlordane	.05 ppm
DDT-Related Substances	.15 ppm
PCB	.15 ppm
<u>Organophosphates</u>	
Thimet	.5 ppm
Diazinon	.5 ppm
Disulfaton	.5 ppm
Methyl Parathion	.5 ppm
Malathion	.5 ppm
Parathion	.5 ppm
Thiodan	.5 ppm
Ethion	.5 ppm
Trithion	.5 ppm



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Project No. 2399-110

ATTACHMENT #1 (Continued)

2. Standard contaminant analysis for water includes:

Barium	DDE, DDD, DDT
Cadmium	PCB
Chromium	Dieldrin
Copper	BHC
Fluorine	Lindane
Iron	HCB
Lead	Endrin
Manganese	Heptachlor Epoxide
Mercury	2,4-D
Selenium	Silvex (2,4,5-TP)
Sodium	Color Test
Sulfate	Turbidity
Ammonia	Arsenic
Total Nitrogen	Silver
Chloride	Zinc



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ATTACHMENT #2

Analysis of Data

If appropriate, cumulative survival will be analyzed using the National Cancer Institute Package. Trend analysis of survival will be evaluated at the 5.0% one-tailed probability level. Control vs. test group comparisons of survival will be evaluated at the 5.0% one-tailed probability level if trend analysis is significant or at the 5.0% two-tailed probability level if trend analysis is not significant.

Growth rates and other data will be analyzed in the order presented in the flowchart. Tests for homogeneity of variances, ANOVA and the Terpstra-Jonckheere Nonparametric Test for Trend will be evaluated at the 5.0% one-tailed probability level.



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ATTACHMENT #3

Protocol Addendum

ANALYTICAL CHEMISTRY

Introduction

The purpose of this work is to provide chemical support for the bioassay studies. This support consists of purity, identity and stability of the bulk compound and development of a method to determine the concentration stability and homogeneity (when indicated) in the dosing vehicle. If the dosing vehicle is corn oil, determination of peroxides in the corn oil will be carried out.

Chemical Characterization of Test Article

The physical appearance will be noted and the source of the chemical together with the manufacturer's stated purity will be reported. The following spectral techniques will be employed initially: Infrared (IR), nuclear magnetic resonance (NMR) and mass spectrometry (MS). Spectra obtained will be compared to literature references¹ and consistency to expected structure. Elemental analysis and determination of water using the Karl Fischer technique will be carried out. A gas chromatographic (GC) technique will be used to assess purity and compared, whenever possible, to known reference standards, if available. Reference samples will be taken on receipt of chemicals and stored frozen for future reanalysis. The GC scan for purity will be carried out and compared to the reserve sample after 4 months (or on receipt of chemical, at the end of the 14-day study and at the end of the 90-day study if more than 4 months have elapsed). Thus, the integrity of and purity of the test article throughout the study will be documented. It is important to choose a GC column that will effectively separate the o-, m-, & p-isomers (see Methodology).

Determination of the Test Article in the Dosing Vehicle

Method Validation

A four-point standard curve will be used (excluding 0). Matrix standards and/or spike recoveries will be used if applicable. Imprecision of the low and high standard will be reported as percent relative standard deviation (% RSD) (n=4) and the middle standards will be analyzed twice. The % RSD should be less than 5%. Linear regression analysis will be carried out of the results of the standard curve.

¹Sadtler Standard Spectra, Philadelphia, PA.



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ATTACHMENT #2 (Continued)

Prior to the study start, compound preparation will mix the low and the high dosage groups. These samples will be analyzed on two different days (HBC protocol). The dosing vehicle will be corn oil and hence analysis of the corn oil for peroxides will be conducted monthly.

Homogeneity

If more than one phase is present, duplicate analyses of homogeneity will be conducted at the high and low dosage group on samples taken from the top, middle and bottom of the mix. Homogeneity analyses will be repeated if the size of mix changes.

Stability

Stability of the test article in the dosing vehicle will be established on the low and high dosage groups at days 0, 7, 14, and 21 at two temperatures -- refrigerated and under conditions of use.

Concentration Analysis

Doses will be mixed at least weekly (or more often if indicated by stability data). Samples will be analyzed in duplicate prior to dosing on weeks 1, 5, 9 and 13 of the 90-day study.

Analyses will be repeated by the chemist if the duplicates are greater than 10% apart. If the results are greater than 10% from target the study director will be notified.

Methodology

It is proposed to analyze the samples for p-xylene by GC using a column containing Bentone[®] 34. This has been used for many years to separate the xylenes. A new packing 5% SP-2100 1.75% Bentone 34 can apparently reduce the analysis time by 50% without any loss of resolution. We propose to use a Hewlett-Packard 5880A GC equipped with an autosampler, a microprocessor-controlled data module and a flame ionization detector. We propose to use n-propyl benzene as an internal standard.

Reports

A brief interim progress report on chemistry will be issued prior to study start, followed by a more formal format as soon after the start as feasible. Concentration analyses will be reported on HLA/HBC Form 55 -- Analysis Report and Request Form. These reports will be incorporated into the final study report.

PRODUCT DESIGNATION

Xylene

MATERIAL

SAFETY DATA SHEET

SECTION 1. SOURCE & NOMENCLATURE

SPONSOR'S NAME		EMERGENCY TELEPHONE NO.	
ADDRESS (Number, Street, City, State, Zip Code)			
MOLECULAR WEIGHT 106.2		CHEMICAL FAMILY Aromatic Hydrocarbon	
CHEMICAL NAME AND SYNONYMS Xylol, Dimethyl benzene		FORMULA $C_6H_4(CH_3)_2$	

(Mixture of ortho, meta and para isomers of Xylene)

SECTION 2. HAZARDOUS INGREDIENTS

BASIC MATERIAL	APPROXIMATE OR MAXIMUM % WT. OR VOL.	ESTABLISHED OSHA STANDARD	LD ₅₀		SPECIES	LD ₅₀ CONC.
			ORAL	PERCUT.		
Xylene		100 ppm = TLV	X		rat	4300 mg,
		150 ppm = STEL*				
* STEL = Short Term Exposure Limit - the max allowable conc not to be exceeded at any time during the 15 min excursion limit						

For m. Xylene:

SECTION 3. PHYSICAL DATA

Meta is the major component of commercial Xylene

BOILING POINT (°F) 282° F	VAPOR PRESSURE (mm Hg.) 10 mm @ 28.3°C
MELTING POINT (°F) -54° F	VAPOR DENSITY (Air=1) 3.66
SPECIFIC GRAVITY (H ₂ O=1) 0.87	EVAPORATION RATE (_____ =1)
SOLUBILITY IN WATER (Pts/100 pts H ₂ O) Insoluble	VOLATILE % Vol. % Wt.
APPEARANCE Clear liquid AND ODOR Similar to benzene and toluene	SOLVENTS Organic solv.

SECTION 4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT METHOD USED 84°F	Ignition temperture: 982° F	FLAMMABLE (EXPLOSIVE) LIMITS	UPPER 7.0 LOWER 1.1
EXTINGUISHING MEDIA Use Dry Chemical. Water maybe ineffective because of low flash point			
SPECIAL FIRE FIGHTING PROCEDURES Wear full-face mask self-contained breathing apparatus which provides eye protection.			
UNUSUAL FIRE AND EXPLOSION HAZARDS Material can be ignited under almost all normal temperature conditions. Vapors form explosive mixtures in air. Avoid flame, heat, sparks.			
LBI-0082 4/77 Vapor may travel a considerable distance to a source of ignition and flash back.			

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MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name _____ Emergency Phone No. _____
Address (No., Street, City, State, Zip Code) _____

Chemical Name and Synonyms <u>Xylene</u> (Xylol, Ethyl Benzene)	Trade Name and Synonyms _____
Chemical Family <u>Aromatic Hydrocarbon</u> may be mixture of O-, M-, and P-Xylenes	Formula <u>C₆H₄ (CH₃)₂</u>

SECTION II HAZARDOUS INGREDIENTS

Paints, Preservatives, & Solvents	%	TLV (Units)	Alloys and Metallic Coatings	%	TLV (Units)
Pigments			Base Metal		
Catalyst			Alloys		
Vehicle			Metallic Coatings		
Solvents			Filler Metal plus Coating or Core Flux		
Additives			Others		
Others					
Hazardous Mixtures of Other Liquids, Solids and Gases				%	TLV (Units)

SECTION III PHYSICAL DATA

Boiling Point (° F.)	291	Specific Gravity (H ₂ O = 1)	0.9
Vapor Pressure (mm Hg.) 8mm Hg @	72°	Percent Volatile By Volume (%)	
Vapor Density (Air = 1)	1.1	Evaporation Rate (= 1)	
Solubility in Water <u>Insol.</u>			
Appearance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	81°-90°F	Flammable Limits	Lel	Uel
Extinguishing Media	Dry chemical, carbon dioxide, foam		1%	7%
Special Fire Fighting Procedures	Avoid contact with skin, wear self-contained breathing apparatus.			
Fire and Explosion Hazards				

PRODUCT DESIGNATION	Xylene
---------------------	--------

SECTION 5. HEALTH HAZARD DATA (IF AVAILABLE)

TOXIC LEVEL	Inhalation - human TCL ₀ *: 200 ppm *TCL ₀ = lowest published toxic con.	CARCINOGENIC	No
PRINCIPAL ROUTES OF ABSORPTION	Lungs	SKIN AND EYE IRRITATION	Skin irritant
RELEVANT SYMPTOMS OF EXPOSURE	Local irritation, CNS excitation and depression. Transient euphoria, headache, giddiness, vertigo, ataxia and tinnitus, confusion.		
EFFECTS OF CHRONIC EXPOSURE	Rabbits chronically exposed developed a decrease in the number of red blood cells and leucocytes and an increase in the platelet count.		
EMERGENCY AND FIRST AID PROCEDURES	Remove from exposure. Wash affected body areas with copious amounts of soap and water. If eye is contaminated, flush with water for at least 15 mins. Notify Medical Office immediately.		

SECTION 6. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY	Normally stable
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION	None expected
INCOMPATIBILITY (Materials to Avoid)	Avoid oxidizing materials
HAZARDOUS DECOMPOSITION PRODUCTS	None expected

SECTION 7. SPILL OR LEAK PROCEDURES Eliminate all sources of ignition and flammability

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	Wearing full-face canister gas mask, lab coat, rubber gloves, confine spill, absorb on toweling or bedding and place in impervious container
WASTE DISPOSAL METHOD	Incineration

SECTION 8. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS	Transfer operations	PROTECTIVE EQUIPMENT (Specify Types)
LOCAL EXHAUST	Should be done in chemical fume hood.	EYE Goggles
MECHANICAL (General)	Required	GLOVES Rubber gloves (neoprene)
SPECIAL	Inhalation chambers for test system	RESPIRATOR Half-face respirator with cartridge effective against organic vapors.
OTHER PROTECTIVE EQUIPMENT	Lab coat	

SECTION 9. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE	Protect against physical damage. Outside or detached storage is preferable. Inside storage should be in a standard flammable liquids storage room or cabinet.
OTHER PRECAUTIONS	Separate from oxidizing materials.

Signature <i>Joseph A. Carr</i> <i>Office of Occupational Safety and Health</i>	Date 8/22/77	Address Office of Occupational Safety and Health
---	-----------------	---

SECTION V HEALTH HAZARD DATA

Threshold Limit Value 100 ppm

Effects of Overexposure Irritant to mucous membranes, Gastrointestinal disturbances, skin irritant, erythema, defatting on skin contact, eye irritation at 200 ppm.

Emergency and First Aid Procedures Remove from exposure. Administer oxygen if respiratory distress. Call physician immediately. On skin contact wash with soap and water. Discard wetted clothing.

SECTION VI REACTIVITY DATA

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (materials to avoid) Can react with oxidizers

Hazardous Decomposition Products

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled Confine spill. Absorb on paper or bedding. Place into impervious container.

Waste Disposal Method Incineration

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify type) Half-mask respirator with organic vapor cartridges up to 10X TLV gask mask and conister at higher concentrations.

Ventilation	Local Exhaust Transfer operations in chemical fume hood.	Special
	Mechanical (General)	Other

Protective Gloves Impervious gloves Eye Protection Avoid eye and face contact, wear goggles or face shield.

Other Protective Equipment Protective clothing.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing Store in well-ventilated area. Away from heat, fire.

Other Precautions

PROTOCOL AMENDMENT



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1330-B PICCARD DRIVE
ROCKVILLE, MARYLAND 208

PROJECT NO. 2399-110 AMENDMENT NO. 1 DATE EFFECTIVE: May 20, 1986

STUDY TITLE: Subchronic Toxicity Study in Rats with P-Xylene

DISTRIBUTION: ORIGINAL SIGNED PROTOCOL TO PSO

FIXED DISTRIBUTION: (No. Copies)*

PERFORMING DEPARTMENTS (4 copies each Director*)

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Lab Animal Medicine (1)	Sponsor (1)

<u>Toxicology (2)</u>	<u>Analytical Chemistry</u>
<u>Pathology (5)</u>	<u></u>

* Unless otherwise directed.

Date and Means of Sponsor Authorization (if appropriate):

Amendment:

Signed protocol forwarded by sponsor (signature page attached).

STUDY DIRECTOR: Gary W. Wolfe
DATE: 5/26/86
Gary W. Wolfe, Ph.D.



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LABORATORIES AMERICA, INC.

1330 - B PICCARD DRIVE, ROCKVILLE, MARYLAND 20850

Project No. 2399-110

SIGNATURE PAGE

APPROVED BY:

Hazleton Laboratories America, Inc.:

Gary W. Wolfe
Study Director, Toxicology

Date: 3/14/86

Gary W. Wolfe
Program Manager, Toxicology

Date: 3/14/86

Sponsor:

Sharon A. Segel

4-23-86

PROTOCOL AMENDMENT



HAZLETON
LABORATORIES AMERICA, INC.

1330-B PICCARD DRIVE
ROCKVILLE, MARYLAND 20850

PROJECT NO. 2399-110 AMENDMENT NO. 2 DATE EFFECTIVE: 6/30/86

STUDY TITLE: Subchronic Toxicity Study in Rats with p-Xylene

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Lab Animal Medicine (1)	Sponsor (1)

Toxicology (2) Analytical Chemistry (1)

Pathology (3)

* Unless otherwise directed.

Date and Means of Sponsor Authorization (if appropriate):

Amendment:

1. Page 4, 11.C. (4) (a): Samples of the lowest and highest levels will be analyzed for stability.
Reason: Changed to agree with Attachment #3 (page 16), "Stability".
2. Page 7, 11.F. (2): Animals will be killed by exsanguination under sodium pentobarbital anesthesia.
Reason: Requested by Sponsor.
3. Page 7, 11.G. (2): Organ weights will not be recorded for those animals selected for electron microscopy.
Reason: Because of whole-body infusion, weights would not be comparable.
4. Page 7, 11.G. (2): Testes will be weighed with epididymis.
Reason: Not previously specified.
5. Page 8, 11.G. (3): Electron microscopy will be performed on 5 animals/sex in the control group and 10 animals/sex in all treated groups.
Reason: Requested by Sponsor.
6. Page 16, Heading: Should read "Attachment #3 (continued)".
Reason: Typographical error.

STUDY DIRECTOR: Ray W. Wolfe

DATE: 2-2-86

